



STIC Search Report

EIC 1700

STIC Database Tracking Number: 114366

TO: Aaron Strange
Location: 3C16
Art Unit : 2153
February 19, 2004

Case Serial Number: 09/668253

From: Terese Esterheld
Location: EIC 2100 CPK. 2, 4B30
Phone: 308-7795

Terese.Esterheld@uspto.gov

Search Notes

Dear Examiner Strange;

Enclosed are the search results of 09/668253. I have searched for Modifying the packet by inserting or a header into the Preamble.

Please look over the complete packet. I marked one item, but there may also be other items of value to you.

If I can be of further assistance, please let me know.

Terese Esterheld

Set	Items	Description
S1	27341	AU=(BECHTOLSHEIM, A? OR BECHTOLSHEIM A? OR SUZUKI, H? OR S- UZUKI H? OR RUSU, M? OR RUSU M? OR FRANTZ, P? OR FRANTZ P? OR PRASAD, S? OR PRASAD S?)
S2	1939	S1 AND IC=G06F?
S3	657	S2 AND IC=G06F-015?
S4	5	S3 AND IC=G06F-015/173
S5	2	S1 AND PACKET AND OPTIC?()NETWORK?
S6	7	S4 OR S5
S7	0	AU=BECHTOLSHEIM A? AND AU=SUZUKI H? AND AU=RUSU M? AND AU=- FRANTZ P? AND AU=PRASAD S?

? show files

File 347:JAPIO Oct 1976-2003/Oct(Updated 040202)

(c) 2004 JPO & JAPIO

File 348:EUROPEAN PATENTS 1978-2004/Feb W02

(c) 2004 European Patent Office

File 349:PCT FULLTEXT 1979-2002/UB=20040212,UT=20040205

(c) 2004 WIPO/Univentio

File 350:Derwent WPIX 1963-2004/UD,UM &UP=200411

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6/5/3 (Item 1 from file: 348)
DIALOG(R) File 348:EUROPEAN PATENTS
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00345514

High-speed optical packet switching system using optical buffer between incoming and outgoing channels.

Schnelles optisches Paketvermittlungssystem mit optischen Puffern zwischen ankommenden und abgehenden Kanälen.

Système de commutation optique de paquets a haute vitesse utilisant un tampon optique entre les canaux d'entree et de sortie.

PATENT ASSIGNEE:

NEC CORPORATION, (236690), 7-1, Shiba 5-chome Minato-ku, Tokyo 108-01, (JP), (applicant designated states: DE;FR;GB;SE)

INVENTOR:

Suzuki, Syuji c/o NEC Corporation, 33-1, Shiba 5-chome, Minato-ku Tokyo, (JP)

Suzuki, Hiroshi c/o NEC Corporation, 33-1, Shiba 5-chome, Minato-ku Tokyo, (JP)

LEGAL REPRESENTATIVE:

VOSSIUS & PARTNER (100311), Postfach 86 07 67, D-81634 Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 347903 A2 891227 (Basic)

EP 347903 A3 910911

EP 347903 B1 940928

APPLICATION (CC, No, Date): EP 89111368 890622;

PRIORITY (CC, No, Date): JP 88156126 880623

DESIGNATED STATES: DE; FR; GB; SE

INTERNATIONAL PATENT CLASS: H04L-012/54; H04L-012/00; H04B-010/00; H04J-014/00;

CITED REFERENCES (EP A):

JOURNAL OF LIGHTWAVE TECHNOLOGY, vol. LT-4, no. 7, July 1986, pages 864-869; D.B. PAYNE et al.: "Transparent single-mode fiber optical networks"

TOPICAL MEETING ON PHOTONIC SWITCHING, vol. 13, March 1987, pages 132-134, New York, US; H. GOTO: "Photonic time-division switching technology"

TOPICAL MEETING ON PHOTONIC SWITCHING, vol. 13, March 1987, pages 141-143, New York, US, R.A. THOMPSON: "Optimizing photonic variable-integer-delay circuits"

GLOBAL TELECOMMUNICATIONS CONFERENCE'87, Tokyo, 15th - 18th November 1987, pages 1861-1865, New York, US; K.Y. ENG: "A photonic knockout switch for high-speed packet networks";

ABSTRACT EP 347903 A2

In an optical **packet** switching system, a plurality of first wavelength tunable devices (13) are connected respectively to incoming line terminals. In response to an incoming signal at the associated incoming line terminal, each of the first wavelength tunable devices generate an optical **packet** of a particular wavelength determined by a first wavelength selection signal supplied from a controller (14). In one embodiment, packets from the first wavelength tunable devices are switched through one or more paths set up by an optical space division switch (15) to one of a plurality of optical buffers (16). Second wavelength tunable devices (17) are respectively coupled to the outputs of the optical buffers for detecting a **packet** of a desired wavelength in response to a second wavelength selection signal from the controller (14) and applying the detected **packet** to one of outgoing line terminals. Each of the optical buffers is made up of an optical coupler having parallel waveguides one of which is disposed in the signal transmission path, the other being disposed in an optical loop for

recirculating a **packet** .
ABSTRACT WORD COUNT: 180

LEGAL STATUS (Type, Pub Date, Kind, Text):

Application: 891227 A2 Published application (A1with Search Report
;A2without Search Report)
Examination: 891227 A2 Date of filing of request for examination:
890719
Search Report: 910911 A3 Separate publication of the European or
International search report
Examination: 940112 A2 Date of despatch of first examination report:
931125
Grant: 940928 B1 Granted patent
Oppn None: 950920 B1 No opposition filed

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	EPBBF1	1663
CLAIMS B	(English)	EPBBF1	1800
CLAIMS B	(German)	EPBBF1	1577
CLAIMS B	(French)	EPBBF1	2075
SPEC A	(English)	EPBBF1	5262
SPEC B	(English)	EPBBF1	5214
Total word count - document A			6925
Total word count - document B			10666
Total word count - documents A + B			17591

6/5/4 (Item 1 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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015357998 **Image available**

WPI Acc No: 2003-418936/200339

XRPX Acc No: N03-334331

Packet **transmission method using synchronous optical network ,**
involves allocating time-division multiplex transmission band to user
according to channel band of packet frame

Patent Assignee: FUJITSU LTD (FUJIT); KOSEKI S (KOSE-I); SHIMADA Y
(SHIM-I); SUZUKI H (SUZU-I)

Inventor: KOSEKI S; SHIMADA Y; **SUZUKI H**

Number of Countries: 002 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030043838	A1	20030306	US 200115262	A	20011212	200339 B
JP 2003069519	A	20030307	JP 2001260375	A	20010829	200339

Priority Applications (No Type Date): JP 2001260375 A 20010829

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
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US 20030043838	A1	22	H04B-007/212	
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JP 2003069519	A	16	H04J-003/00	
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Abstract (Basic): US 20030043838 A1

NOVELTY - The method involves mapping a **packet** frame of a user to
a payload of a minimum unit synchronous frame of optical transmission
paths so as to allocate a time-division multiplex transmission band to
user according to a channel band of the **packet** frame.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for
packet transmission device.

USE - For transmitting **packet** through synchronous loptical

network (SONET).

ADVANTAGE - By allocating time-division multiplex transmission band according to user's needs, the encapsulation into an asynchronous transfer mode (ATM) cell is omitted. Therefore an improved efficiency in **packet** transmission is achieved and a transparent local area network (LAN) service (TLS) is realized.

DESCRIPTION OF DRAWING(S) - The figure shows the configuration of the **packet** transmission system.

pp; 22 DwgNo 6/15

Title Terms: **PACKET** ; TRANSMISSION; METHOD; SYNCHRONOUS; OPTICAL; NETWORK; ALLOCATE; TIME; DIVIDE; MULTIPLEX; TRANSMISSION; BAND; USER; ACCORD; CHANNEL; BAND; **PACKET** ; FRAME

Derwent Class: W01; W02

International Patent Class (Main): H04B-007/212; H04J-003/00

File Segment: EPI

6/5/5 (Item 2 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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015357641 **Image available**

WPI Acc No: 2003-418579/200339

XRPX Acc No: N03-333976

Virtual private network service system controls transfer of packet of corresponding user by referencing routing table

Patent Assignee: FUJITSU LTD (FUIT); SUZUKI H (SUZU-I)

Inventor: **SUZUKI H**

Number of Countries: 002 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20030041170	A1	20030227	US 2001998550	A	20011129	200339 B
JP 2003069609	A	20030307	JP 2001253308	A	20010823	200339

Priority Applications (No Type Date): JP 2001253308 A 20010823

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
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US 20030041170	A1	20	G06F-015/173	
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JP 2003069609	A	15	H04L-012/56	
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Abstract (Basic): US 20030041170 A1

NOVELTY - A router includes virtual router unit corresponding to each user of virtual private network service. The virtual router unit includes routing table for storing routing information for transferring a packet of corresponding user, and routing unit for controlling transfer of packet of corresponding user by referencing routing table.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for router apparatus.

USE - For providing virtual private network service by using internet protocol network.

ADVANTAGE - A routing table is separated for each virtual private network (VPN) and VPN service is provided by using routing table, so that security of each virtual private network is improved.

DESCRIPTION OF DRAWING(S) - The figure shows the virtual private network service process.

pp; 20 DwgNo 2/13

Title Terms: VIRTUAL; PRIVATE; NETWORK; SERVICE; SYSTEM; CONTROL; TRANSFER; **PACKET**; CORRESPOND; USER; REFERENCE; ROUTE; TABLE

Derwent Class: W01

International Patent Class (Main): **G06F-015/173** ; H04L-012/56

International Patent Class (Additional): H04L-012/46
File Segment: EPI

6/5/6 (Item 3 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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014470608 **Image available**
WPI Acc No: 2002-291311/200233
XRPX Acc No: N02-227453

Printing method for print system has server which outputs printing data corresponding to positional information included in printing request received from printer in response to printing instruction from mobile terminal

Patent Assignee: CANON KK (CANO); FUKUNAGA S (FUKU-I); INOSE T (INOS-I); KIMURA T (KIMU-I); SUZUKI H (SUZU-I); TAKAGI E (TAKA-I); TAKAKU M (TAKA-I)

Inventor: FUKUNAGA S; INOSE T; KIMURA T; SUZUKI H ; TAKAGI E; TAKAKU M

Number of Countries: 002 Number of Patents: 005

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 20020016836	A1	20020207	US 2001893647	A	20010629	200233 B
JP 2002014790	A	20020118	JP 2000199928	A	20000630	200233
JP 2002014779	A	20020118	JP 2000199926	A	20000630	200233
JP 2002014780	A	20020118	JP 2000199930	A	20000630	200233
JP 2002014781	A	20020118	JP 2000199931	A	20000630	200233

Priority Applications (No Type Date): JP 2000199931 A 20000630; JP 2000199926 A 20000630; JP 2000199928 A 20000630; JP 2000199930 A 20000630

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 20020016836	A1		30	G06F-015/173	
JP 2002014790	A		9	G06F-003/12	
JP 2002014779	A		16	G06F-003/12	
JP 2002014780	A		9	G06F-003/12	
JP 2002014781	A		13	G06F-003/12	

Abstract (Basic): US 20020016836 A1

NOVELTY - The system includes a mobile terminal (105) for transmitting printing instruction to the input of printer (108). The printer transmits printing request including positional information of print data to server, in response to printing instruction. Server (101) transmits the printing data corresponding to positional information included in the request to the printer.

DETAILED DESCRIPTION - INDEPENDENT

CLAIMS are also included for the following:

- (a) Printing method;
- (b) Server;
- (c) Printing program;
- (d) Printer;
- (e) Recorded medium storing printing program

USE - Printing system comprising server, mobile terminal such as cellular phone, personal digital assistant and printer connected to networks such as Internet, intranet.

ADVANTAGE - By designating the printing data, printing is performed irrespective of the state of printer and the usage efficiency is improved. By transmitting printing instructions to the printer, high speed printing is enabled and repetition of the same printing procedure is avoided. High quality printing is obtained and the burden of downloading large volume data is reduced.

DESCRIPTION OF DRAWING(S) - The figure shows the construction of printing system.

Server (101)

Mobile terminal (105)

Printer (108)

pp; 30 DwgNo 1/17

Title Terms: PRINT; METHOD; PRINT; SYSTEM; SERVE; OUTPUT; PRINT; DATA;
CORRESPOND; POSITION; INFORMATION; PRINT; REQUEST; RECEIVE; PRINT;
RESPOND; PRINT; INSTRUCTION; MOBILE; TERMINAL

Derwent Class: P75; T01; W01

International Patent Class (Main): G06F-003/12 ; G06F-015/173

International Patent Class (Additional): B41J-005/30; B41J-029/38;

G06F-013/00 ; H04L-012/28; H04N-001/00; H04N-001/21

File Segment: EPI; EngPI

6/5/7 (Item 4 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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012011244 **Image available**

WPI Acc No: 1998-428154/199836

XRPX Acc No: N98-334134

Network terminal device connected to host device with memory for storing files - selects item from displayed items, checks if stored in memory, down-loads from host computer to memory if file corresponding to selected indicated item if not stored in memory, processor executes process based on down-loaded file

Patent Assignee: CASIO COMPUTER CO LTD (CASK)

Inventor: SUZUKI H

Number of Countries: 010 Number of Patents: 006

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9833129	A1	19980730	WO 98JP326	A	19980127	199836 B
JP 10275132	A	19981013	JP 981644	A	19980107	199851
EP 894307	A1	19990203	EP 98900760	A	19980127	199910
			WO 98JP326	A	19980127	
JP 10333967	A	19981218	JP 97345211	A	19971215	199910
US 20020007391	A1	20020117	WO 98JP326	A	19980127	200212
			US 98142431	A	19980902	
US 6493743	B2	20021210	WO 98JP326	A	19980127	200301
			US 98142431	A	19980902	

Priority Applications (No Type Date): JP 97345211 A 19971215; JP 9714199 A 19970128; JP 9785281 A 19970403

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 9833129 A1 E 73 G06F-017/30

Designated States (National): CN KR US

Designated States (Regional): DE FR GB IT NL SE

JP 10275132 A 12 G06F-015/00

EP 894307 A1 E G06F-017/30 Based on patent WO 9833129

Designated States (Regional): DE FR GB IT NL SE

JP 10333967 A 11 G06F-012/00

US 20020007391 A1 G06F-015/173

US 6493743 B2 G06F-015/16 Based on patent WO 9833129

Abstract (Basic): WO 9833129 A

The device has a memory for storing files and a mechanism for displaying indication items for specifying the files on a display

screen. The desired indication item is selected from the displayed items. It is determined whether or not a file corresponding to the indication item selected is stored in the memory.

The file corresponding to the selected indicated item is down-loaded from the host computer (20) to the memory, when it is determined that the file is not stored. A processor executes a process based on the file down-loaded by the down-loading mechanism.

USE - For accessing host computer via communications network from data processing terminal device, down-loading variety of files and executing data processing.

ADVANTAGE - Can execute file immediately it is down-loaded.

Dwg.1/15

Title Terms: NETWORK; TERMINAL; DEVICE; CONNECT; HOST; DEVICE; MEMORY; STORAGE; FILE; SELECT; ITEM; DISPLAY; ITEM; CHECK; STORAGE; MEMORY; DOWN; LOAD; HOST; COMPUTER; MEMORY; FILE; CORRESPOND; SELECT; INDICATE; ITEM; STORAGE; MEMORY; PROCESSOR; EXECUTE; PROCESS; BASED; DOWN; LOAD; FILE

Derwent Class: T01

International Patent Class (Main): G06F-012/00 ; G06F-015/00 ;

G06F-015/16 ; G06F-015/173 ; G06F-017/30

International Patent Class (Additional): G06F-003/14 ; G06F-009/445 ;

G06F-013/00

File Segment: EPI

Set	Items	Description
S1	46099	AU=(BECHTOLSHEIM, A? OR BECHTOLSHEIM A? OR SUZUKI, H? OR S- UZUKI H? OR RUSU, M? OR RUSU M? OR FRANTZ, P? OR FRANTZ P? OR PRASAD S? OR PRASAD S?)
S2	105	S1 AND PACKET()SWITCH?
S3	6	S2 AND ETHERNET
S4	28	S1 AND ETHERNET
S5	12	S4 AND (PREAMBLE OR PACKET?)
S6	12	S3 OR S5

? show files

File 2:INSPEC 1969-2004/Feb W2
(c) 2004 Institution of Electrical Engineers

File 6:NTIS 1964-2004/Feb W3
(c) 2004 NTIS, Intl Cpyrght All Rights Res

File 8:Ei Compendex(R) 1970-2004/Feb W2
(c) 2004 Elsevier Eng. Info. Inc.

File 34:SciSearch(R) Cited Ref Sci 1990-2004/Feb W2
(c) 2004 Inst for Sci Info

File 35:Dissertation Abs Online 1861-2004/Jan
(c) 2004 ProQuest Info&Learning

File 65:Inside Conferences 1993-2004/Feb W3
(c) 2004 BLDSC all rts. reserv.

File 92:IHS Intl.Stds.& Specs. 1999/Nov
(c) 1999 Information Handling Services

File 94:JICST-EPlus 1985-2004/Feb W2
(c)2004 Japan Science and Tech Corp(JST)

File 95:TEME-Technology & Management 1989-2004/Feb W1
(c) 2004 FIZ TECHNIK

File 99:Wilson Appl. Sci & Tech Abs 1983-2004/Jan
(c) 2004 The HW Wilson Co.

File 103:Energy SciTec 1974-2004/Feb B1
(c) 2004 Contains copyrighted material

File 144:Pascal 1973-2004/Feb W2
(c) 2004 INIST/CNRS

File 202:Info. Sci. & Tech. Abs. 1966-2004/Jan 20
(c) 2004 EBSCO Publishing

File 233:Internet & Personal Comp. Abs. 1981-2003/Sep
(c) 2003 EBSCO Pub.

File 239:Mathsci 1940-2004/Mar
(c) 2004 American Mathematical Society

File 275:Gale Group Computer DB(TM) 1983-2004/Feb 17
(c) 2004 The Gale Group

File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec
(c) 1998 Inst for Sci Info

File 647:CMP Computer Fulltext 1988-2004/Feb W2
(c) 2004 CMP Media, LLC

File 674:Computer News Fulltext 1989-2004/Feb W2
(c) 2004 IDG Communications

File 696:DIALOG Telecom. Newsletters 1995-2004/Feb 17
(c) 2004 The Dialog Corp.

6/5/1 (Item 1 from file: 2)
DIALOG(R) File 2:INSPEC
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7498487 INSPEC Abstract Number: B2003-02-6210L-191, C2003-02-5620W-107
Title: **Compact equation of TCP throughput estimation at upgrading bottleneck link speed**
Author(s): Honda, Y.; Kashio, J.; Sugimori, T.; Kitano, F.; Suzuki, H.
Author Affiliation: Fac. of Eng., Mie Univ., Tsu, Japan
Journal: Electronics and Communications in Japan, Part 1 (Communications)
vol.86, no.1 p.65-73
Publisher: Scripta Technica,
Publication Date: 2002 Country of Publication: USA
CODEN: ECJCED ISSN: 8756-6621
SICI: 8756-6621(2002)86:1L.65:CETE;1-2
Material Identity Number: J974-2002-011
Language: English Document Type: Journal Paper (JP)
Treatment: Practical (P); Theoretical (T); Experimental (X)

Abstract: This paper considers a network in which one of the links is a communication bottleneck, and the speed of that link is upgraded. A simple method is proposed for calculating the effect of the upgrade on the throughput of TCP communication passing through the link. As the first step, a formula for the TCP communication throughput is proposed, which is a function of the mean window size of the TCP flow control, the round-trip time, and the **packet** loss ratio. The waiting time in the router, which is the major factor determining the round-trip time, is approximated by the M/M/1/m queue. By combining those two expressions, the change of the throughput by upgrading the link speed is calculated. To verify the validity of the throughput calculation and the router model, the change of the TCP communication throughput in upgrading the speed of the bottleneck link is calculated, and the result is compared to the result of actual measurements in an experimental network composed of PPP (point-to-point protocol) and **Ethernet**. It is seen that, although it is simple, the proposed model agrees well with the actual measurement. The method is applied to the network between Mie University and SINET. The effect of the link speed upgrading on TCP throughput is examined and verified. The obtained result is expected to be useful in network design and in estimating the link speed required to dissolve a bottleneck. (8 Refs)

Subfile: B C

Descriptors: Internet; local area networks; parameter estimation; queueing theory; telecommunication congestion control; telecommunication network planning; telecommunication network routing; telecommunication traffic; transport protocols

Identifiers: TCP throughput estimation; bottleneck link; speed upgrade; TCP flow control; round-trip time; **packet** loss ratio; router waiting time; point-to-point protocol; **Ethernet**; Mie University; SINET; network design; Internet traffic

Class Codes: B6210L (Computer communications); B6150P (Communication network design, planning and routing); B6150M (Protocols); B6150J (Queueing systems); C5620W (Other computer networks); C5620L (Local area networks); C5640 (Protocols); C5670 (Network performance)

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6/5/2 (Item 2 from file: 2)
DIALOG(R) File 2:INSPEC
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7154768 INSPEC Abstract Number: B2002-02-6150J-007, C2002-02-1140C-004
Title: **Using dynamic buffer limiting to protect against belligerent flows**

in high-speed networks

Author(s): Ertemalp, F.; Cheriton, D.R.; **Bechtolsheim, A.**
Conference Title: Proceedings Ninth International Conference on Network
Protocols. ICNP 2001 p.230-40
Publisher: IEEE Comput. Soc, Los Alamitos, CA, USA
Publication Date: 2001 Country of Publication: USA xii+351 pp.
ISBN: 0 7695 1429 4 Material Identity Number: XX-2001-02624
U.S. Copyright Clearance Center Code: 1092-1658/01/\$17.00
Conference Title: Proceedings Ninth International Conference on Network
Protocols. ICNP 2001
Conference Sponsor: IEEE; IEEE Comput. Soc.; IEEE Comput. Soc., TCSE
Conference Date: 11-14 Nov. 2001 Conference Location: Riverside, CA,
USA

Language: English Document Type: Conference Paper (PA)

Treatment: Theoretical (T)

Abstract: Conventional QoS mechanisms have focused primarily on providing better than normal service for some flows over others. With networks moving to much higher speeds and reasonable provisioning, best efforts access to network resources is adequate for common applications except when a belligerent flow attempts to consume an excessive amount of bandwidth. Any mechanism that attempts to contain such a flow must be able to operate at wirespeed in hardware. In this environment, conventional QoS mechanisms are not sufficient, either because they do not have mechanisms to contain these belligerent flows or because they are not practical to implement in hardware. In this paper we describe dynamic buffer limiting (DBL), a buffer and queue management mechanism designed to recognize and handle belligerent flows at very high speed and suitable for hardware implementation. (13 Refs)

Subfile: B C

Descriptors: buffer storage; local area networks; **packet switching**; quality of service; queueing theory; telecommunication congestion control; transport protocols

Identifiers: dynamic buffer limiting; high-speed networks; belligerent flows protection; QoS mechanisms; network resources; bandwidth; queue management; buffer management; TCP flows; **Ethernet** switch; **packet** size

Class Codes: B6150J (Queueing systems); B0240C (Queueing theory); B6210L (Computer communications); B6150M (Protocols); C1140C (Queueing theory); C5620L (Local area networks); C5640 (Protocols)

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6/5/3 (Item 3 from file: 2)

DIALOG(R)File 2:INSPEC

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6725545 INSPEC Abstract Number: B2000-11-6150M-088, C2000-11-5640-050

Title: Compact equation of TCP throughput estimation at upgrading bottleneck link

Author(s): Honda, Y.; Kashio, J.; Sugimori, T.; Kitano, F.; **Suzuki, H.**

Author Affiliation: Fac. of Eng., Mie Univ., Tsu, Japan

Journal: Transactions of the Institute of Electronics, Information and Communication Engineers B vol.J83-B, no.6 p.755-62

Publisher: Inst. Electron. Inf. & Commun. Eng,

Publication Date: June 2000 Country of Publication: Japan

CODEN: DJTBEU ISSN: 0913-5715

SICI: 0913-5715(200006)J83B:6L.755:CETE;1-Q

Material Identity Number: K839-2000-008

Language: Japanese Document Type: Journal Paper (JP)

Treatment: Theoretical (T); Experimental (X)

Abstract: This paper presents a convenient method to estimate the TCP throughput when a bottleneck portion of a network has been upgraded. We

propose a equation to estimate the TCP throughput, which is expressed by functions of the average of the window size of TCP flow control, RTT and **packet** loss rate. The waiting time at the router, which contribute to RTT, is derived by the application of the M/M/1/m queueing model, where m is the number of buffers. These two equation are simultaneously solved to find the improved throughput when the bottleneck link is upgraded. The validity of the derived equation is tested by an experimental network which consists of PPP and **Ethernet**. The bottleneck PPP link speed is changed. The derived equations are simple but well fit the experimental value. The equation is also applied to estimate the increase of the TCP throughput if the link between Mie University and SINET is upgraded. (8 Refs)

Subfile: B C

Descriptors: buffer storage; local area networks; **packet switching**; parameter estimation; performance evaluation; queueing theory; telecommunication links; transport protocols

Identifiers: TCP throughput estimation; bottleneck link upgrading; compact equation; TCP flow control; window size; RTT; **packet** loss rate; router waiting time; M/M/1/m queueing model; experimental network; **Ethernet**; bottleneck PPP link speed; Mie University; SINET

Class Codes: B6150M (Protocols); B6210L (Computer communications); B0240C (Queueing theory); B6150J (Queueing systems); C5640 (Protocols); C5620L (Local area networks); C1220 (Simulation, modelling and identification); C5670 (Network performance); C1140C (Queueing theory)

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DIALOG(R)File 2:INSPEC

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5552909 INSPEC Abstract Number: B9705-6210L-165, C9705-5610N-002

Title: **FX1000: a high performance single chip Gigabit Ethernet NIC**

Author(s): Ross, M.; **Bechtolsheim, A.**; Le, M.T.; O'Sullivan, J.

Conference Title: Digest of Papers. COMPCON Spring 97. Forty-Second IEEE Computer Society International Conference Proceedings (Cat. No.97CB36028) p.218-23

Publisher: IEEE Comput. Soc. Press, Los Alamitos, CA, USA

Publication Date: 1997 Country of Publication: USA xvi+342 pp.

ISBN: 0 8186 7804 6 Material Identity Number: XX97-00756

U.S. Copyright Clearance Center Code: 1063 6390/97/\$10.00

Conference Title: Proceedings IEEE COMPCON 97. Digest of Papers

Conference Sponsor: IEEE Comput. Soc

Conference Date: 23-26 Feb. 1997 Conference Location: San Jose, CA, USA

Language: English Document Type: Conference Paper (PA)

Treatment: Practical (P)

Abstract: We present the design of the FX1000, a high performance single chip Gigabit **Ethernet** NIC. With a 64 bit, 66 MHz PCI bus interface the chip can maintain a throughput of 2 Gbps between memory and the network. The 64-bit address also allows the FX1000 to address very large system memory. In addition, it transmits and receives **packets** with minimal assistance from the CPU. Furthermore, the FX1000 performs TCP checksum calculation and IEEE 802.1q virtual LAN processing in hardware. (0 Refs)

Subfile: B C

Descriptors: IEEE standards; local area networks; network interfaces; **packet switching**; performance evaluation; system buses; telecommunication standards

Identifiers: FX1000; single chip Gigabit **Ethernet** NIC; high performance; PCI bus interface; **packet** sending; very large system memory; CPU; TCP checksum calculation; IEEE 802.1q; virtual LAN processing; network

interface controller; 64 bit; 66 MHz; 2 Gbit/s

Class Codes: B6210L (Computer communications); B6150C (Communication switching); C5610N (Network interfaces); C5620L (Local area networks); C5610S (System buses)

Numerical Indexing: word length 6.4E+01 bit; frequency 6.6E+07 Hz; bit rate 2.0E+09 bit/s

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6/5/5 (Item 5 from file: 2)

DIALOG(R) File 2: INSPEC

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4857968 INSPEC Abstract Number: B9502-6210L-092, C9502-5620L-039

Title: Expandable ATOM switch architecture (XATOM) for ATM LANs

Author(s): Ruixue Fan; Suzuki, H.; Yamada, K.; Matuura, N.

Author Affiliation: C&C Res. Labs., NEC Corp., Kawasaki, Japan

Part vol.1 p.402-9 vol.1

Publisher: IEEE, New York, NY, USA

Publication Date: 1994 Country of Publication: USA 3 vol. xxxvii+1851 pp.

ISBN: 0 7803 1825 0

U.S. Copyright Clearance Center Code: 0 7803 1825 0/94/\$4.00

Conference Title: Proceedings of ICC/SUPERCOMM'94 - 1994 International Conference on Communications

Conference Sponsor: IEEE Commun. Soc.; IEEE New Orleans Sect.; Telecommun. Ind. Assoc.; US Telephone Assoc

Conference Date: 1-5 May 1994 Conference Location: New Orleans, LA, USA

Language: English Document Type: Conference Paper (PA)

Treatment: Applications (A); New Developments (N)

Abstract: There is growing interest in building ATM switch based "multimedia LANs" as the next generation local area networks, which overcomes performance limitations of shared media type LANs, such as **Ethernet** and FDDI. Since LAN terminals tend to transmit **packets** at the same speed as that of network links, such as at 100 Mbps, ATM LAN switches are inevitable to provide much larger buffer capacity than public network ATM switches, which are designed to accommodate lower-speed data services than the network link speed. Moreover, both low delay switching and multicast functions are required for multimedia applications. Responding to these requirements, this paper proposes a new switch architecture, referred to as "expandable ATOM switch (XATOM)", which is a kind of input and output buffer switch architecture, and can expand the buffer capacity simply by adding low cost memory chips. By combining low-speed and large capacity input-buffer memories and a backpressure control between input and output buffers, the XATOM switch can achieve high-throughput with low cell loss rate even in high-speed burst traffic environments. Since contention among multiple input buffers is eliminated in the XATOM switch, the input buffer management, both for avoiding head-of-line blocking and for supporting priority and multicast control functions, can be easily implemented. Delay and cell loss probability for the XATOM switch have been evaluated based on simulation study results. The paper also discusses some implementation specific details. (17 Refs)

Subfile: B C

Descriptors: asynchronous transfer mode; buffer storage; local area networks; multimedia communication

Identifiers: ATM LAN; multimedia LAN; expandable ATOM switch architecture; XATOM; local area networks; buffer capacity; network link speed; low delay switching; multicast functions; output buffer; input buffer; memory chips; backpressure control; high-throughput; low cell loss rate; high-speed burst traffic; input buffer management; multicast control

functions; cell loss probability; delay; simulation; 2.4 Gbit/s
Class Codes: B6210L (Computer communications); B6210R (Multimedia communications); B6150C (Communication switching); B6230F (Integrated switching and transmission systems); C5620L (Local area networks)
Numerical Indexing: bit rate 2.4E+09 bit/s
Copyright 1995, IEE

6/5/6 (Item 1 from file: 8)
DIALOG(R)File 8: Ei Compendex(R)
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06204878 E.I. No: EIP02477216111

Title: Compact equation of TCP throughput estimation at upgrading bottleneck link speed

Author: Honda, Yasuhiro; Kashio, Jiro; Sugimori, Takahiro; Kitano, Fumiaki; Suzuki, Hidetomo

Corporate Source: Faculty of Engineering Mie University, Tsu, 514-8507, Japan

Source: Electronics and Communications in Japan, Part I: Communications (English translation of Denshi Tsushin Gakkai Ronbunshi) v 86 n 1 January 2003. p 65-73

Publication Year: 2003

CODEN: ECJCED ISSN: 8756-6621

Language: English

Document Type: JA; (Journal Article) Treatment: T; (Theoretical); X; (Experimental)

Journal Announcement: 0211W4

Abstract: This paper considers a network in which one of the links is the bottleneck of communication, and the speed of that link is upgraded. A simple method of calculation is proposed for the effect of the upgrading on the throughput of the TCP communication passing through the link. As the first step, a formula for the TCP communication throughput is proposed, which is a function of the mean window size of the TCP flow control, the round-trip time, and the loss ratio of the packet. The waiting time in the router, which is the major factor determining the round-trip time, is approximated by the M/M/1/m queue. By combining those two expressions, the change of the throughput by upgrading the link speed is calculated. In order to verify the validity of the throughput calculation and the router model, the change of the TCP communication throughput in upgrading the speed of the bottleneck link is calculated, and the result is compared to the result of actual measurement in the experimental network composed of PPP and Ethernet. It is seen that the model proposed in this paper agrees well with the actual measurement although it is simple. The method is applied to the network between Mie University and SINET. The effect of the link speed upgrading on TCP throughput is examined and verified. The result obtained in this paper is expected to be useful in the network design, in estimating the link speed required in dissolving the bottleneck. 8 Refs.

Descriptors: Network protocols; Telecommunication traffic; Telecommunication links; Congestion control (communication); Routers; Response time (computer systems); Packet networks; Queueing networks; Calculations; Mathematical models; Approximation theory; Local area networks; Internet

Identifiers: Communication throughput; Ethernet; Router model

Classification Codes:

723.2 (Data Processing); 716.1 (Information & Communication Theory); 722.3 (Data Communication, Equipment & Techniques); 722.4 (Digital Computers & Systems); 921.6 (Numerical Methods); 723.5 (Computer Applications)

723 (Computer Software, Data Handling & Applications); 716 (Electronic

Equipment, Radar, Radio & Television); 722 (Computer Hardware); 921
(Applied Mathematics)
72 (COMPUTERS & DATA PROCESSING); 71 (ELECTRONICS & COMMUNICATION
ENGINEERING); 92 (ENGINEERING MATHEMATICS)

6/5/7 (Item 2 from file: 8)
DIALOG(R)File 8: Ei Compendex(R)
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04665347 E.I. No: EIP97043595391

Title: **FX1000: a high performance single chip gigabit ethernet NIC**
Author: Ross, Mark; **Bechtolsheim, Andy** ; Le, My T.; O'Sullivan, Jim
Corporate Source: Cisco Systems, Inc
Conference Title: Proceedings of the 1997 IEEE COMPCON Conference
Conference Location: San Jose, CA, USA Conference Date:
19970223-19970226
Sponsor: IEEE
E.I. Conference No.: 46226
Source: Digest of Papers - COMPCON - IEEE Computer Society International
Conference 1997. IEEE, Piscataway, NJ, USA, 97CB36028. p 218-223
Publication Year: 1997
CODEN: DCSIDU
Language: English
Document Type: CA; (Conference Article) Treatment: T; (Theoretical)
Journal Announcement: 9705W4

Abstract: In this paper we present the design of the FX1000, a high
performance single chip Gigabit **Ethernet** NIC. With a 64 bit, 66MHz PCI
bus interface, the chip can maintain a throughput of 2Gbps between memory
and the network. 64-bit address also allows the FX1000 to address very
large system memory. In addition, it transmits and receives **packets** with
minimal assistance from the CPU. Furthermore, the FX1000 performing TCP
checksum calculation and IEEE 802.1q Virtual LAN processing in hardware.
(Author abstract)

Descriptors: Network protocols; Microprocessor chips; User interfaces;
Computer networks; **Packet switching** ; Channel capacity; Data storage
equipment; Local area networks

Identifiers: **Ethernet** network interface controller; Input output bus;
Programmed input output

Classification Codes:
722.3 (Data Communication, Equipment & Techniques); 722.2 (Computer
Peripheral Equipment); 716.1 (Information & Communication Theory); 722.1
(Data Storage, Equipment & Techniques)
722 (Computer Hardware); 716 (Radar, Radio & TV Electronic Equipment)
72 (COMPUTERS & DATA PROCESSING); 71 (ELECTRONICS & COMMUNICATIONS)

6/5/8 (Item 3 from file: 8)
DIALOG(R)File 8: Ei Compendex(R)
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03945197 E.I. No: EIP94091411053

Title: **Expandable ATOM switch architecture (XATOM) for ATM LANs**
Author: Fan, Ruixue; **Suzuki, Hiroshi** ; Yamada, Kenji; Matsuura, Noritaka
Corporate Source: NEC Corp, Kawasaki, Jpn
Conference Title: Proceedings of the 1994 IEEE International Conference
on Communications
Conference Location: New Orleans, LA, USA Conference Date:
19940501-19940505
Sponsor: IEEE Communications Society; IEEE New Orleans Section;

Telecommunications Industry Association; United States Telephone Association

E.I. Conference No.: 20804

Source: Conference Record - International Conference on Communications v 1 1994. Publ by IEEE, IEEE Service Center, Piscataway, NJ, USA. p 402-409

Publication Year: 1994

CODEN: CICC DV ISSN: 0536-1486 ISBN: 0-7803-1826-9

Language: English

Document Type: CA; (Conference Article) Treatment: A; (Applications); T ; (Theoretical)

Journal Announcement: 9411W1

Abstract: There is growing interest in building ATM switch based 'Multimedia LANs' as the next generation local area networks, which overcomes performance limitations of shared media type LANs, such as **Ethernet** and FDDI. Since LAN terminals tend to transmit **packets** at the same speed as that of network links, such as at 100Mbps, ATM LAN switches are inevitable to provide much larger buffer capacity than public network ATM switches, which are designed to accommodate lower-speed data services than the network link speed. Moreover, both low delay switching and multicast functions are required for multimedia applications. Responding to these requirements, this paper proposes a new switch architecture, referred to as 'Expandable ATOM switch (XATOM)', which is a kind of input and output buffer switch architecture, and can expand the buffer capacity simply by adding low cost memory chips. By combining low-speed and large capacity input-buffer memories and a backpressure control between input and output buffers, the XATOM switch can achieve high-throughput with low cell loss rate even in high-speed burst traffic environments. Since contention among multiple input buffers is eliminated in the XATOM switch, the input buffer management, both for avoiding Head-of-line blocking and for supporting priority and multicast control functions, can be easily implemented. Delay and cell loss probability for the XATOM switch have been evaluated based on simulation study results. The paper also discusses some implementation specific details. With this switch architecture, a high-performance and low cost switch for ATMLANs is realized. (Author abstract) 17 Refs.

Descriptors: Switches; Local area networks; Telecommunication links; Telecommunication traffic; Channel capacity; Telecommunication services; Switching functions; Switching; **Packet switching**; Probability

Identifiers: Expandable ATOM switch architecture; Asynchronous transfer mode; Delay switching; Multicast function; Buffer capacity; Backpressure control

Classification Codes:

715.2 (Industrial Electronic Equipment); 722.3 (Data Communication, Equipment & Techniques); 716.1 (Information & Communication Theory); 721.1 (Computer Theory, Includes Formal Logic, Automata Theory, Switching Theory, Programming Theory); 922.1 (Probability Theory); 723.5 (Computer Applications)

715 (General Electronic Equipment); 722 (Computer Hardware); 716 (Radar, Radio & TV Electronic Equipment); 721 (Computer Circuits & Logic Elements); 922 (Statistical Methods); 723 (Computer Software)

71 (ELECTRONICS & COMMUNICATIONS); 72 (COMPUTERS & DATA PROCESSING); 92 (ENGINEERING MATHEMATICS)

6/5/9 (Item 1 from file: 34)

DIALOG(R)File 34:SciSearch(R) Cited Ref Sci
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11047965 Genuine Article#: 600UW Number of References: 8

Title: **Compact equation of TCP throughput estimation at upgrading bottleneck link speed**

Author(s): Honda Y (REPRINT) ; Kashio J; Sugimori T; Kitano F; **Suzuki H**

Corporate Source: Mie Univ, Fac Engr, Tsu/Mie 5148507/Japan/ (REPRINT); Mie Univ, Fac Engr, Tsu/Mie 5148507/Japan/; Hewlett Packard Corp, Hachioji/Tokyo 1928510/Japan/
Journal: ELECTRONICS AND COMMUNICATIONS IN JAPAN PART I-COMMUNICATIONS, 2003, V86, N1 (JAN), P65-73
ISSN: 8756-6621 Publication date: 20030100
Publisher: SCRIPTA TECHNICA-JOHN WILEY & SONS, 605 THIRD AVE, NEW YORK, NY 10158 USA
Language: English Document Type: ARTICLE
Geographic Location: Japan
Journal Subject Category: ENGINEERING, ELECTRICAL & ELECTRONIC; TELECOMMUNICATIONS

Abstract: This paper considers a network in which one of the links is the bottleneck of communication, and the speed of that link is upgraded. A simple method of calculation is proposed for the effect of the upgrading on the throughput of the TCP communication passing through the link. As the first step, a formula for the TCP communication throughput is proposed, which is a function of the mean window size of the TCP flow control, the round-trip time, and the loss ratio of the **packet**. The waiting time in the router, which is the major factor determining the round-trip time, is approximated by the M/M/1/m queue. By combining those two expressions, the change of the throughput by upgrading the link speed is calculated. In order to verify the validity of the throughput calculation and the router model, the change of the TCP communication throughput in upgrading the speed of the bottleneck link is calculated, and the result is compared to the result of actual measurement in the experimental network composed of PPP and **Ethernet**. It is seen that the model proposed in this paper agrees well with the actual measurement although it is simple. The method is applied to the network between Mie University and SINET. The effect of the link speed upgrading on TCP throughput is examined and verified. The result obtained in this paper is expected to be useful in the network design, in estimating the link speed required in dissolving the bottleneck. (C) 2002 Wiley Periodicals, Inc.

Descriptors--Author Keywords: Internet ; traffic ; TCP ; throughput

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WRIGHT GR, 1994, V1, TCP IP ILLUSTRATED

6/5/10 (Item 1 from file: 94)

DIALOG(R)File 94:JICST-EPlus

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04755548 JICST ACCESSION NUMBER: 00A0674973 FILE SEGMENT: JICST-E
Compact Equation of TCP Throuput Estimation at Upgrading Bottleneck Link Speed.

HONDA YASUHIRO (1); KASHIO JIRO (1); KITANO FUMIAKI (1); SUZUKI HIDETOMO (1); SUGIMORI TAKAHIRO (2)

(1) Mie Univ., Fac. of Eng.; (2) Nihonhyurettopakkado
Denshi Joho Tsushin Gakkai Ronbunshi B(Transaction of the Institute of Electronics, Information and Communication Engineers B), 2000, VOL.J83-B,NO.6, PAGE.755-762, FIG.10, REF.8

JOURNAL NUMBER: S0622CAY ISSN NO: 1344-4697

UNIVERSAL DECIMAL CLASSIFICATION: 621.395.31 681.3:654

LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan
DOCUMENT TYPE: Journal
ARTICLE TYPE: Original paper
MEDIA TYPE: Printed Publication

ABSTRACT: This paper proposes a simple method to calculate the effect on TCP communication throughput through the line when the line speed is improved in a network of which the line is a bottleneck in the communication. At first, an equation for throughput calculation of TCP communication is proposed which is given by a function of average value of window size of the TCP flow control and round trip times and **packet** loss rate. The latency at a router, a main factor to determine round trip time was approximated by M/M/1/m queue. The change of the throughput in the line speedup is calculated by simultaneous equations of these two. In order to confirm the validity of the throughput computation equation and the router model, ratio of the change of the throughput of the TCP communication in changing the bottleneck line speed was compared with the result of the measurement with an experimental network consisting of PPP and **Ethernet**. The model proposed in this paper was found to agree well with the measured value in spite of simplicity. The model was applied to a network between Mie Univ. and SINET, and the effect on TCP throughput in the line speedup was presented and verified. The result obtained in this paper seems to be an effective method for the estimation of line speedup required to solve the bottleneck in network design.

DESCRIPTORS: internet; TCP-IP; throughput; flow control(information); queue; traffic monitoring; communication design; parameter estimation; communication channel model; transmission speed

BROADER DESCRIPTORS: computer network; communication network; information network; network; protocol; rule; performance; control; queuing theory; theory; communication monitoring; monitoring; communication administration; management; design; system identification; identification; recognition; statistical estimation; estimation; statistical decision; decision; statistical method; communication system model; model; velocity; transmission characteristic; characteristic

CLASSIFICATION CODE(S): ND02040C; JC03000K

6/5/11 (Item 2 from file: 94)

DIALOG(R)File 94:JICST-EPlus
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03722003 JICST ACCESSION NUMBER: 98A0830282 FILE SEGMENT: JICST-E

Compact Equation to Estimate Internet Throughput.

KASHIO JIRO (1); HONDA YASUHIRO (1); **SUZUKI HIDETOMO** (1); KITANO FUMIAKI (1); SUGIMORI TAKAHIRO (2)

(1) Mie Univ., Fac. of Eng.; (2) Hewlett-Packard Japan, Ltd.

Joho Shori Gakkai Shinpojiumu Ronbunshu, 1998, VOL.98,NO.8, PAGE.189-196, FIG.13, TBL.1, REF.3

JOURNAL NUMBER: Y0978BAT

UNIVERSAL DECIMAL CLASSIFICATION: 681.3:654

LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan

DOCUMENT TYPE: Conference Proceeding

ARTICLE TYPE: Original paper

MEDIA TYPE: Printed Publication

ABSTRACT: Severe decrease of the response time and the throughput due to increasing traffic of the internet, request network managers to find the bottleneck portion and estimate the effect of the grade-up of the communication line speed. Throughput of TCP can be approximated by the average window size divided by the round trip time(RTT). If **packets** are lost due to the congestion, extra time of the retransmission should

be added to prolong the RTT. The waiting time at the router which contribute the RTT, is derived by the application of M/M/1/m model, where m is the number of buffer. The validity of the derived equation is tested by the experimental network where a router connects an **ethernet** and a low speed serial line. The equation is applied to estimate to what extent the communication line between Mie university and SINET be up-graded. When the bottleneck is on the interface connecting SINET and commercial internet, 2 to 3 times speed up of the line was sufficient. However, after the bottle neck was removed, the speed up of the line at least 1 digit is necessary. (author abst.)

DESCRIPTORS: WAN; protocol; throughput; window system; approximation method ; **packet** ; queuing time; buffer system; repeater; queue; traffic measurement; internet; TCP-IP

BROADER DESCRIPTORS: computer network; communication network; information network; network; rule; performance; method; object; time; storage system; communication apparatus; equipment; queuing theory; theory; exchange measurement; communication measurement; electrical measurement ; measurement

CLASSIFICATION CODE(S): JC03000K

6/5/12 (Item 1 from file: 95)

DIALOG(R)File 95:TEME-Technology & Management
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00819348 E94106192063

Expandable ATOM switch architecture (XATOM) for ATM LANs

(Erweiterbare ATOM Vermittungsarchitektur fuer lokale ATM-Netzwerke)

Fan, RX; **Suzuki, H** ; Yamada, K; Matsuura, N

NEC Kawasaki, Japan

SUPERCOMM/ICC 94, 1994 IEEE Int. Conf. on Communications, Serving Humanity Through Communications, Vol. 1, New Orleans, USA, May 1-5, 1994/1994

Document type: Conference paper Language: English

Record type: Abstract

ISBN: 0-7803-1826-9; 0-7803-1825-0

ABSTRACT:

There is growing interest in building ATM switch based 'multimedia LANs' as the next generation local area networks, which overcomes performance limitations of shared media type LANs, such as **Ethernet** and FDDI. Since LAN terminals tend to transmit **packets** at the same speed as that of network links, such as 100 Mb/s, ATM LAN switches are inevitable to provide much larger capacity than public network ATM switches, which are designed to accommodate lower-speed data services than the network link speed. Moreover, both low delay switching and multicast functions are required for multimedia applications. Responding to these requirements, this paper proposes a new switch architecture, referred to as 'Expandable ATOM switch' (XATOM), which is a kind of input and output buffer switch architecture, and can expand the buffer capacity simply by adding low cost memory chips. By combining low-speed and large capacity input-buffer memories and a backpressure control between input and output buffers, the XATOM switch can achieve high throughput with low cell loss rate even in high-speed burst traffic environments. Since contention among multiple input buffers is eliminated in the XATOM switch, the input buffer management, both for avoiding head-of-line blocking and for supporting priority and multicast control functions, can be easily implemented. Delay and cell loss probability for the XATOM switch have been evaluated based on simulation study results. The paper also discusses some implementation specific details. With this switch architecture, a high-performance and low cost switch for ATM LANs is realized.

DESCRIPTORS: LIGHT COMMUNICATION; SWITCHING TECHNOLOGY; LAN--LOCAL AREA
NETWORKS; NETWORK ARCHITECTURE; BUFFER STORAGE; **PACKET SWITCHING** ;
ASYNCHRONOUS TRANSFER MODE
IDENTIFIERS: lokales Netz; Vermittlungstechnik

Set	Items	Description
S1	1984005	MODIF? OR EDIT? OR REVIS? OR REVAMP? OR REV
		OR UP() (DATING OR DATE? ?) OR UPDAT? OR CHANGE
S2	992218	PACKET? OR FRAME? OR DATAGRAM? OR BLOCK() D?
S3	1745441	INSERT? OR (PUT OR SET) () (INTO OR "IN") OR
		RJECT?
S4	5168839	HEADER OR DATA OR FILE OR DESCRIPTION? OR
S5	300091	IN() PLACE() OF OR INSTEAD OR SUBSTITUTE OR
S6	6191	PREAMBLE OR STATEMENT
S7	1	S1 AND S2 AND S3 AND S4 AND S5 AND S6
S8	11	S3 AND S5 AND S6
S9	4290	S1 AND S2 AND S3 AND S4
S10	5	S9 AND S6
S11	40	S2 AND S3 AND S4 AND S6
S12	50	S7 OR S8 OR S10 OR S11
S13	10	S12 AND IC=G06F?

Patents

? show files

File 347:JAPIO Oct 1976-2003/Oct(Updated 040202)

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File 350:Derwent WPIX 1963-2004/UD,UM &UP=200411

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13/5/1 (Item 1 from file: 347)
DIALOG(R)File 347:JAPIO
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03816393 **Image available**
PORTABLE TERMINAL EQUIPMENT

PUB. NO.: 04-181493 [JP 4181493 A]
PUBLISHED: June 29, 1992 (19920629)
INVENTOR(s): YANAGISAWA TSUTOMU
APPLICANT(s): FUJITSU LTD [000522] (A Japanese Company or Corporation), JP
(Japan)
APPL. NO.: 02-310647 [JP 90310647]
FILED: November 16, 1990 (19901116)
INTL CLASS: [5] G07B-001/00; G06F-015/21 ; G06F-015/74 ; G06K-007/01
JAPIO CLASS: 29.4 (PRECISION INSTRUMENTS -- Business Machines); 45.3
(INFORMATION PROCESSING -- Input Output Units); 45.4
(INFORMATION PROCESSING -- Computer Applications)
JAPIO KEYWORD: R131 (INFORMATION PROCESSING -- Microcomputers &
Microprocessors)
JOURNAL: Section: P, Section No. 1438, Vol. 16, No. 502, Pg. 38,
October 16, 1992 (19921016)

ABSTRACT

PURPOSE: To adjust excess fare in a train by a prepaid card or a credit card by executing the adjustment processing based on information obtained by reading information stored in the card and printing the result to issue a **statement** of account **instead** of a ticket.

CONSTITUTION: when an adjusted amount is registered and a train crew **inserts** a prepaid card 1a to a prepaid card reader/writer 2s, read data is temporarily stored in a memory 9 through a CPU 3. the adjusted amount is subtracted from the balance in the prepaid card 1a, and the result is written in the prepaid card 1a, and data of the date, the departure station, the adjusted amount, or the like is sent to a receipt printer 5 to issue a **statement** of account where this data is printed. Thus, the prepaid card 1a or a credit card 1b can be used for adjustment of the excess fare.

13/5/2 (Item 2 from file: 347)
DIALOG(R)File 347:JAPIO
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01930676 **Image available**
DATA RECORDING SYSTEM

PUB. NO.: 61-144776 [JP 61144776 A]
PUBLISHED: July 02, 1986 (19860702)
INVENTOR(s): ADACHI OSAMU
YAMADA WASAKU
APPLICANT(s): RICOH CO LTD [000674] (A Japanese Company or Corporation), JP
(Japan)
APPL. NO.: 59-264577 [JP 84264577]
FILED: December 17, 1984 (19841217)
INTL CLASS: [4] G11B-020/12; G06F-003/06
JAPIO CLASS: 42.5 (ELECTRONICS -- Equipment); 45.3 (INFORMATION
PROCESSING -- Input Output Units)
JOURNAL: Section: P, Section No. 518, Vol. 10, No. 344, Pg. 18,

November 20, 1986 (19861120)

ABSTRACT

PURPOSE: To detect securely the 1st **frame** synchronizing signal after a **preamble** value by arranging plural **frame** synchronizing signals consisting of patterns whose autocorrelation is not sharp in a **preamble** constituting a **data** area.

CONSTITUTION: The **preamble** PA1 is constituted by inserting (n) **frame** synchronizing signals FS into a bit synchronizing signal BS1 at intervals Tf of one **frame**. A formatter controller 1 generates the **preamble** PA1 by operating a bit synchronizing circuit 2 and a **frame** synchronizing signal generating circuit 3 successively (n) times at a period Tf and then operating the circuit 2 once. Then, the controller 1 operates the circuit 3 and then outputs write **data** for one **frame** from a **data** buffer 4; and this operation is repeated by as many times as the total number of **frames** of a **data** area to generate signals for one sector. Plural signals FS are arranged in the same **preamble**, so even if an error occurs to the 1st signal FS arranged right after the **preamble**, the position of the **frame** is predictable.

13/5/5 (Item 3 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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013870502 **Image available**

WPI Acc No: 2001-354714/200137

XRPX Acc No: N01-257756

Accounts system using computer network data transfer for business and customer account information, where data is extracted from client accounting software in first format to be processed in second format for printing or electronic transfer

Patent Assignee: EXPRESS PROMOTIONS AUSTRALIA PTY LTD (EXPR-N)

Inventor: GRANT J A; LANGMAID R R; REED B J

Number of Countries: 094 Number of Patents: 003

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200120504	A1	20010322	WO 2000AU1125	A	20000915	200137 B
AU 200076304	A	20010417	AU 200076304	A	20000915	200140
NZ 517860	A	20030926	NZ 517860	A	20000915	200366
			WO 2000AU1125	A	20000915	

Priority Applications (No Type Date): AU 992835 A 19990915

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

WO 200120504 A1 E 25 G06F-017/60

Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TZ UG ZW

AU 200076304 A G06F-017/60 Based on patent WO 200120504

NZ 517860 A G06F-151:00 Based on patent WO 200120504

Abstract (Basic): WO 200120504 A1

NOVELTY - Account processing method and system including, receiving account data over a communications network, which has been extracted in a first predetermined format from an accounting software package of a

remote client computer system. Account data is processed and stored according to business rules in a database system in a second predetermined format based on client parameters which define client business rules and variables.

DETAILED DESCRIPTION - Customer account information, such as **statement** or invoice data is then generated, where the account data is sent to a printing system for printing, sorting and **inserting** into envelopes or **alternatively** the information is sent to the customers by electronic transmission media, such as e-mail, fax and electronic funds transfer (EFT) systems.

INDEPENDENT CLAIMS are also included for the following:

(1) An account system.

(2) Account processing software.

USE - For large and small business accounting and client customer account information and invoice transfer.

ADVANTAGE - Provides an account system for receiving, processing and returning client customer account information, statements and invoices over a communications network thus significantly reducing the amount of accounting department administration with regard for example to document handling, printing, folding and placing into envelopes for subsequent mailing.

DESCRIPTION OF DRAWING(S) - Basic account information system production steps flow diagram.
pp; 25 DwgNo 2/8

Title Terms: ACCOUNT; SYSTEM; COMPUTER; NETWORK; DATA; TRANSFER; BUSINESS; CUSTOMER; ACCOUNT; INFORMATION; DATA; EXTRACT; CLIENT; ACCOUNT; SOFTWARE; FIRST; FORMAT; PROCESS; SECOND; FORMAT; PRINT; ELECTRONIC; TRANSFER

Derwent Class: T01; W01

International Patent Class (Main): G06F-017/60 ; G06F-151-00

International Patent Class (Additional): G06F-151/00

File Segment: EPI

13/5/6 (Item 4 from file: 350)

DIALOG(R) File 350:Derwent WPIX

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013722538 **Image available**

WPI Acc No: 2001-206768/200121

XRPX Acc No: N01-148005

Optimization system for source programs, has modification processor to change deceleration variables when they do not correspond to variables shifted by substitution statement in source program

Patent Assignee: NEC CORP (NIDE)

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
JP 2001022590	A	20010126	JP 99190268	A	19990705	200121 B

Priority Applications (No Type Date): JP 99190268 A 19990705

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
JP 2001022590	A		9 G06F-009/45	

Abstract (Basic): JP 2001022590 A

NOVELTY - A deceleration **statement** having variable corresponding to objective variable is **inserted** initially in a source program. When a substitution **statement** with array shift function, shifts value of variables within the source program and if variables in deceleration **statement** do not correspond to shifted variable, modification

processor (16) corrects variables of deceleration **statement** , accordingly.

DETAILED DESCRIPTION - An INDEPENDENT CLAIM is also included for optimization procedure of source program having array shift function.

USE - For optimizing source program having array shift functions such as CSHIFT, EOSHIFT in Fortran language.

ADVANTAGE - Since variables of deceleration **statement** are changed suitably, entire array is accessed continuously and avoids need for several number of branches within source program for correcting deceleration variables.

DESCRIPTION OF DRAWING(S) - The figure illustrates the optimization process of source program.

Modification processor (16)

pp; 9 DwgNo 1/6

Title Terms: SYSTEM; SOURCE; PROGRAM; MODIFIED; PROCESSOR; CHANGE;

DECELERATE; VARIABLE; CORRESPOND; VARIABLE; SHIFT; **SUBSTITUTE** ;

STATEMENT ; SOURCE; PROGRAM

Derwent Class: T01

International Patent Class (Main): G06F-009/45

File Segment: EPI

13/5/7 (Item 5 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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013673736 **Image available**

WPI Acc No: 2001-157948/200116

Related WPI Acc No: 2000-671906

XRPX Acc No: N01-114964

Job control language control block parameter modification system for main frame computers, revises parameters of JCL control block having request for data storage space allocation, based on historical data

Patent Assignee: SIDWELL L P (SIDW-I)

Inventor: SIDWELL L P

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 6131190	A	20001010	US 97993644	A	19971218	200116 B
			US 99305727	A	19990505	

Priority Applications (No Type Date): US 99305727 A 19990505; US 97993644 A 19971218

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

US 6131190 A 13 G06F-005/00 CIP of application US 97993644

Abstract (Basic): US 6131190 A

NOVELTY - A **data** collection unit collects historical **data** , based on actual requirement in **data** storage space of each **data** set. A parsing unit parses job control language (JCL) control block with reference to **data** sets and requested **data** storage space allocation. The parameters in JCL control block is **revised** , based on the historical **data** .

USE - For **modifying** JCL parameter to optimize **data** storage allocation based on historical space requirements for each **data** set in main **frame** computer used in business environment.

ADVANTAGE - Process and **revises** the JCL control blocks **instead** of generating **revised** JCL **statement** . Provides a report for the user summarizing the historical actual usage requirements for each **data** set and provides statistics on overall efficiency of space allocation.

DESCRIPTION OF DRAWING(S) - The figure shows the schematic block diagram of JCL parameters **modification** system.

pp; 13 DwgNo 1, 6/7

Title Terms: JOB; CONTROL; LANGUAGE; CONTROL; BLOCK; PARAMETER; **MODIFIED** ;
SYSTEM; MAIN; COMPUTER; **REVISED** ; PARAMETER; CONTROL; BLOCK; REQUEST;
DATA ; STORAGE; SPACE; ALLOCATE; BASED; HISTORY; **DATA**

Derwent Class: T01

International Patent Class (Main): **G06F-005/00**

File Segment: EPI

13/5/8 (Item 6 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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011470356 **Image available**

WPI Acc No: 1997-448263/199741

XRPX Acc No: N97-373625

Computer-interpreted grammatical rules for generating queries in grammar for testing ODBC database engine driver - comprises static elements for generating constant parts of queries from rules and variable elements, e.g. query and query list elements, for generating driver parts of queries, with variable elements replaced by particular engine driver val

Patent Assignee: MICROSOFT CORP (MICR-N)

Inventor: FAST R W

Number of Countries: 001 Number of Patents: 001

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5664173	A	19970902	US 95562916	A	19951127	199741 B

Priority Applications (No Type Date): US 95562916 A 19951127

Patent Details:

Patent No	Kind	Lan Pg	Main IPC	Filing Notes
US 5664173	A	26	G06F-017/30	

Abstract (Basic): US 5664173 A

The grammar, parsing method, and associated apparatus for automatically generating test commands to test an SQL database engine interface while reducing storage requirements and improving access time for such test commands as compared with prior test tools. The test tools and methods include a grammar for concise syntactic representation of a meta-query (also referred to as meta-language **statement**, query pattern, or query template). The meta-query defines an **statement** similar to the SQL language but includes query elements and query list elements used to generate a plurality of SQL test commands to be applied to the SQL database engine under test.

Test commands are generated from the meta-query to reduce storage requirements of prior test methods. Query elements are variable space holders in the meta-query and are replaced by a value appropriate to the SQL database engine under test when the meta-query is used to generate test commands. Query list elements define a list of values to be **inserted in place of** the query list element when generating the test commands from the meta-query.

USE/ADVANTAGE - E.g. for testing database engine drivers in Open DataBase Connection environment by automatic generation of test commands from meta-query pattern. Meta-language permits test commands to be expressed in concise, compact meta-language syntax. Simple, fast storage and modification of meta-queries.

Dwg.2/7

Title Terms: COMPUTER; INTERPRETATION; RULE; GENERATE; QUERY; GRAMMAR; TEST

; DATABASE; ENGINE; DRIVE; COMPRISE; STATIC; ELEMENT; GENERATE; CONSTANT;
PART; QUERY; RULE; VARIABLE; ELEMENT; QUERY; QUERY; LIST; ELEMENT;
GENERATE; DRIVE; PART; QUERY; VARIABLE; ELEMENT; REPLACE; ENGINE; DRIVE
Derwent Class: T01
International Patent Class (Main): G06F-017/30
File Segment: EPI

13/5/9 (Item 7 from file: 350)
DIALOG(R)File 350:Derwent WPIX
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010362088 **Image available**
WPI Acc No: 1995-263402/199534
Related WPI Acc No: 1997-118480
XRPX Acc No: N95-202484

Data compression system - inserts non-repetitive data into data
-stream and removes repeated data , adds coded repeated pattern sample,
identification preamble , decoding instruction, period count, mask and
repeat count signals

Patent Assignee: MOLL E W (MOLL-I)
Inventor: MOLL E W
Number of Countries: 001 Number of Patents: 001
Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
US 5434568	A	19950718	US 85690478	A	19850110	199534 B
			US 90531631	A	19900601	
			US 93127013	A	19930924	

Priority Applications (No Type Date): US 85690478 A 19850110; US 90531631 A
19900601; US 93127013 A 19930924

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
US 5434568	A		23	G06F-007/20	Cont of application US 85690478 Cont of application US 90531631

Abstract (Basic): US 5434568 A

Repetitive data and non-repetitive data , including periods of
no information , are encoded prior to transmission or storage in
digital form. Repetition, partial repetition, and near repetition is
encoded in a form indicating the occurrence of repetition, its
characteristics and its duration. The existence and size of repeated
patterns in the data is dynamically determined.

When repetition is detected, non-repetitive data is inserted
into the data -stream and repeated data is removed from the data
-stream. To this non-repeated data in the data -stream are added a
coded repeated pattern sample, an identification preamble signal, an
instruction signal for decoding purposes, a period count signal, a mask
signal, and a repeat count signal. All necessary data elements are
combined and assembled to produce compressed data . A receiver
utilizes these coded and uncoded data elements to regenerate complete
original data .

USE/ADVANTAGE - For recorded message and announcement systems,
dictation machines, speech synthesisers, speech recognition, speech
comparison, video storage, packet storage, tone interval timing, tone
synthesisers, ASCII data storage, in digital telephone carrier
systems, statistical multiplex systems carrying voice or data ,
packet transmission, video and data transmission, TASI, DSI.
Minimises memory space required for storage or time required to
transmission. Suppresses transmission of repetitive signals when number

of such signals exceeds threshold.

Dwg.7/9

Title Terms: DATA ; COMPRESS; SYSTEM; INSERT ; NON; REPEAT; DATA ; 1DATA
; STREAM; REMOVE; REPEAT; DATA ; ADD; CODE; REPEAT; PATTERN; SAMPLE;
IDENTIFY; PREAMBLE ; DECODE; INSTRUCTION; PERIOD; COUNT; MASK; REPEAT;
COUNT; SIGNAL

Derwent Class: T01; U21; W01

International Patent Class (Main): G06F-007/20

International Patent Class (Additional): G06F-005/00

File Segment: EPI

13/5/10 (Item 8 from file: 350)

DIALOG(R)File 350:Derwent WPIX

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007303744

WPI Acc No: 1987-300751/198743

XRFX Acc No: N87-224675

Computer system with source code re-creation capability - appends
compiled code information necessary to re-create source which generated
compiled code

Patent Assignee: TEXAS INSTR INC (TEXI)

Inventor: SRIVASTAVA A

Number of Countries: 004 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 243110	A	19871028	EP 87303392	A	19870416	198743 B
US 5249275	A	19930928	US 86854221	A	19860421	199340
			US 88191857	A	19880504	
			US 89316556	A	19890227	
			US 91696265	A	19910430	

Priority Applications (No Type Date): US 86854221 A 19860421; US 88191857 A
19880504; US 89316556 A 19890227; US 91696265 A 19910430

Cited Patents: 3.Jnl.ref; A3...9122; No-SR.Pub

Patent Details:

Patent No	Kind	Lan	Pg	Main	IPC	Filing	Notes
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EP 243110	A	E	19				
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Designated States (Regional): DE FR GB

US 5249275	A	8	G06F-009/45	Cont of application US 86854221
				Cont of application US 88191857
				Cont of application US 89316556

Abstract (Basic): EP 243110 A

The method involves translating a source code **statement** into an object code block, appending to the block **information** sufficient to recreate the source code **statement**, and linking the object code block and appended **information** into a list with object code and appended **information** for any related source code statements. The above steps are repeated for each of the sources code statements.

The linking step pref. includes creating a procedure execution **frame** for each procedure defined by the source code statements, each **frame** having pointers, each of which points to a list of object code blocks having a common property, determining which **frame** cprresp. to the procedure in which the source code **statement** belongs, selecting a list of blocks pointed to by a pointer in the determined **frame** which have a common property with the source code statements, and **inserting** the block into the selected list.

ADVANTAGE - In compiling PROLOG programs, allows program statements

which use original source code to be compiled.

Dwg.0/5

Title Terms: COMPUTER; SYSTEM; SOURCE; CODE; CREATION; CAPABLE; COMPILE;
CODE; **INFORMATION** ; NECESSARY; SOURCE; GENERATE; COMPILE; CODE

Derwent Class: T01

International Patent Class (Main): **G06F-009/45**

International Patent Class (Additional): **G06F-009/44**

File Segment: EPI

Set	Items	Description
S1	1702755	MODIF? OR EDIT? OR REVIS? OR REVAMP? OR REW OR UP() (DATING OR DATE? ?) OR UPDAT? OR CHANGE
S2	317896	PACKET? OR FRAME? OR DATAGRAM? OR BLOCK() D/
S3	710674	INSERT? OR (PUT OR SET)() (INTO OR "IN") OR RJECT?
S4	1202149	HEADER OR DATA OR FILE OR DESCRIPTION? OR INFORMATION
S5	854266	IN() PLACE() OF OR INSTEAD OR SUBSTITUTE OR ALTERNATIVE?
S6	83583	PREAMBLE OR STATEMENT
S7	61	S1 (S) S2 (S) S3 (S) S4 (S) S5 (S) S6
S8	264	S3 (S) S4 (S) S5 (S) S6
S9	74	S8 (S) S2
S10	74	S7 OR S9
S11	27	S10 AND IC=G06F?

? show files

File 348:EUROPEAN PATENTS 1978-2004/Feb W02

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File 349:PCT FULLTEXT 1979-2002/UB=20040212,UT=20040205

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*None of these
met the requirements*

Set	Items	Description
S1	30787	MODIF? OR EDIT? OR REVIS? OR REVAMP? OR REWORK? OR ALTER? - OR UP() (DATING OR DATE? ?) OR UPDAT? OR CHANGE?
S2	5900	PACKET? OR FRAME? OR DATAGRAM? OR BLOCK() DATA
S3	1304	INSERT? OR (PUT OR SET) () (INTO OR "IN") OR INJECT? OR INTE- RJECT?
S4	59204	HEADER OR DATA OR FILE OR DESCRIPTION? OR INFORMATION
S5	6221	IN() PLACE() OF OR INSTEAD OR SUBSTITUTE OR ALTERNATIVE?
S6	493	PREAMBLE OR STATEMENT
S7	0	S1 AND S2 AND S3 AND S4 AND S5 AND S6
S8	2	S3 AND S5 AND S6
S9	27	S1 AND S2 AND S3 AND S4
S10	0	S9 AND S6
S11	0	S2 AND S3 AND S4 AND S6
S12	22	S9 NOT PY>2000
S13	22	S12 NOT PD>20000921
S14	3	S13 AND (STRIP? OR REPLACE? OR EMBED? OR ENCAPSULATE?)

? show files

File 256:SoftBase:Reviews,Companies&Prods. 82-2004/Jan
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14/5/1

DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.
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00117900 DOCUMENT TYPE: Review

PRODUCT NAMES: Microsoft Money (336734); Quicken (701823)

TITLE: Paperless Bills

AUTHOR: Nash, Sharon

SOURCE: PC Magazine, v18 n13 p28(1) Jul 1999

ISSN: 0888-8509

HOME PAGE: <http://www.pcmag.com>

RECORD TYPE: Review

REVIEW TYPE: Product Analysis

GRADE: Product Analysis, No Rating

Microsoft Money, Intuit's Quicken, and UTM Systems' UTM Machine are highlighted in a discussion of the future potential for paperless, Web-enabled, online bill paying. CheckFree, a bill consolidator, has a few years' momentum in the market and may dominate. However, Microsoft backs TransPoint, and the Sun Microsystems/Netscape Communications alliance also has an online bill paying strategy. Online bill payment has been possible with Microsoft Money and Quicken online options, and through various banks. Although the user does not have to write and mail checks, paper checks are still generated and mailed to billers. However, consolidators such as CheckFree and TransPoint now provide bill aggregation and World Wide Web presentment technology to billers. When a customer visits a biller's or consolidator's Web site directly, bank **information** is entered and e-checks or direct debits are authorized. CheckFree and Yahoo! are rumored to be cooperating to make bill presentment and paying even easier by visiting a single portal or bank site and viewing a consolidator-provided summary of all bills. Consumers can then visit a biller's Web site through a **frame** in the portal. The UTM Machine, a floppy disk **reworked** to be a magnetic **stripe** reader with a credit card slot, allows user to make Web purchases by sliding a credit/debit/ATM card into the disk and **inserting** it in the PC floppy disk drive. An ATM-type screen shown on the screen receives a PIN number, and eliminates the need to reenter payment **data** each time a purchase is made.

COMPANY NAME: Microsoft Corp (112127); Intuit Inc (447013)

DESCRIPTORS: Check Processing; E-Billing; E-Payment; IBM PC & Compatibles;
Personal Finance

REVISION DATE: 19991030

14/5/2

DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.
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00103676 DOCUMENT TYPE: Review

PRODUCT NAMES: Macromedia HomeSite 3.0 Beta (655571); WebEdit Professional 3.0 Beta (623407)

TITLE: HomeSite, WebEdit ease tag chores

AUTHOR: Dugan, Sean

SOURCE: InfoWorld, v19 n46 p110C(2) Nov 17, 1997

ISSN: 0199-6649

HOMEPAGE: <http://www.infoworld.com>

RECORD TYPE: Review
REVIEW TYPE: Review
GRADE: B

Allaire's HomeSite 3.0 beta and Luckman Interactive's WebEdit Professional 3.0 beta are Windows Hypertext Markup Language (HTML) **editors** reviewed and compared. The two products set themselves apart by providing wizards and **editing** dialog boxes that accelerate coding, and by providing features such as global search and **replace**, HTML validation, and link verification. HomeSite 3.0 still has a basic HTML tagging architecture, with no WYSIWYG view, but adds automation to the coding process. WebEdit, instead of emphasizing automated tag **insertion**, uses many wizards and **editing** dialog boxes, so that HTML code is untouched. Macintosh developers will pick up on similarities to BBEdit, because both products have many productive features first provided in BBEdit. Both toolsets allow users to quickly build home pages, tables, or **framesets** with multiple wizards. They create code that needs tuning, instead of highly refined HTML. For instance, **frame** wizards allow users to create a good **frameset**, but **frame** borders have to be tweaked. Users who do not understand HTML tags and their many attributes may be somewhat confused by wizards, but help files can help. HomeSite 3.0 provides a Good Tag Tips feature and a convenient clipping **file** for code reuse. It also is highly customizable. WebEdit Pro 3.0 supports HTML 4.0, Java, ActiveX, and JavaScript.

COMPANY NAME: Macromedia Inc (423106); Luckman Interactive Inc (620858)
SPECIAL FEATURE: Charts Screen Layouts
DESCRIPTORS: Authoring Systems; Electronic Publishing; HTML; IBM PC & Compatibles; Internet Utilities; Text **Editors**; Web Site Design; Windows
REVISION DATE: 20020923

14/5/3

DIALOG(R)File 256:SoftBase:Reviews,Companies&Prods.
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00083402 DOCUMENT TYPE: Review

PRODUCT NAMES: Microsoft Visual C++ (437875)

TITLE: Visual C++ boosts class view, debugging
AUTHOR: DelRossi, Robert A
SOURCE: InfoWorld, v17 n40 p95(1) Oct 2, 1995
ISSN: 0199-6649
HOMEPAGE: <http://www.infoworld.com>

RECORD TYPE: Review
REVIEW TYPE: Review
GRADE: A

Microsoft's Visual C++ gets a thumbs up for its intuitive, class-oriented project **framework**, better debugging, a component gallery for **insertion** of Object Linking and **Embedding** (OLE) custom controls and reusable C++ classes. The component gallery is a repository for stored OCXs and reusable classes, and several OCX and C++ components ship with Visual C++ 4.0. When the developer moves the mouse pointer over a variable, a DataTip with its value is displayed. A WizardBar on the **editing** window provides access to code in a class' event. Pop-up menus ease navigation to references and

definitions; they also add to classes. A standout feature is tabbed project management which shows a class-based view of work, reducing **file** management tasks; the class view displays member functions and **data** members.

PRICE: \$499

COMPANY NAME: Microsoft Corp (112127)

SPECIAL FEATURE: Screen Layouts Charts

DESCRIPTORS: C++; C++ Compilers; IBM PC & Compatibles; OOP (Object Oriented Programming); Programming Languages

REVISION DATE: 20020228

Set	Items	Description
S1	4117763	MODIF? OR EDIT? OR REVIS? OR REVAMP? OR REWORK? OR ALTER? - OR UP() (DATING OR DATE? ?) OR UPDAT? OR CHANGE?
S2	673360	PACKET? OR FRAME? OR DATAGRAM? OR BLOCK()DATA
S3	728423	INSERT? OR (PUT OR SET)() (INTO OR "IN") OR INJECT? OR INTE- RJECT? OR STRIP OR REPLACE OR EMBED OR ENCAPSULATE
S4	5496260	HEADER OR DATA OR FILE OR DESCRIPTION? OR INFORMATION
S5	603281	IN()PLACE()OF OR INSTEAD OR SUBSTITUTE OR ALTERNATIVE?
S6	38692	PREAMBLE OR STATEMENT
S7	1	S1 AND S2 AND S3 AND S4 AND S5 AND S6
S8	20	S3 AND S4 AND S5 AND S6
S9	1477	S1 AND S2 AND S3 AND S4
S10	9	S9 AND S6
S11	27	S2 AND S3 AND S4 AND S6
S12	45	S7 OR S8 OR S10 OR S11
S13	36	S12 NOT PY>2000
S14	36	S13 NOT PD>20000921
S15	31	RD (unique items)

? show fileslogoff

File 8: Ei Compendex(R) 1970-2004/Feb W2
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File 233: Internet & Personal Comp. Abs. 1981-2003/Sep
(c) 2003 EBSCO Pub.

File 94: JICST-EPlus 1985-2004/Feb W2
(c) 2004 Japan Science and Tech Corp(JST)

File 99: Wilson Appl. Sci & Tech Abs 1983-2004/Jan
(c) 2004 The HW Wilson Co.

File 95: TEME-Technology & Management 1989-2004/Feb W1
(c) 2004 FIZ TECHNIK

File 583: Gale Group Globalbase(TM) 1986-2002/Dec 13
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computation. Several approaches to resolving the difficulty are considered, and in particular it is suggested to **replace** some axioms of the form $P \text{ implies } Q \text{ by } P \text{ implies eventually}(Q)$, where P and Q are control predicates, thereby separating control states previously identified. (Author abstract) 17 Refs.

Descriptors: COMPUTER PROGRAMMING LANGUAGES; COMPUTER SYSTEMS, DIGITAL--Parallel Processing; COMPUTER METATHEORY--Programming Theory; COMPUTERS, DIGITAL-- **Data** Communication Systems; COMPUTER OPERATING SYSTEMS--Storage Allocation; COMPUTER PROGRAMMING--Structured Programming

Identifiers: AXIOMATIC SEMANTICS; CONCURRENT PROGRAMMING; CONTROL LOCATIONS; CONTROL PREDICATES; DISTRIBUTED PROGRAMMING

Classification Codes:

723 (Computer Software); 722 (Computer Hardware)

72 (COMPUTERS & DATA PROCESSING)

15/5/8 (Item 8 from file: 8)
DIALOG(R) File 8: Ei Compendex(R)
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02247487 E.I. Monthly No: EIM8705-031990

Title: **FEEDFORWARD TRANSPARENT TONE-IN BAND (TTIB) FOR RAPID SYNCHRONISATION IN DIGITAL COMMUNICATIONS.**

Author: Bateman, A.; McGeehan, J. P.

Corporate Source: Univ of Bristol, Engl

Conference Title: Conference on Communications - An Industry on the Move.

Conference Location: Birmingham, Engl Conference Date: 19860513

Sponsor: IEE, Electronics Div, London, Engl; British Computer Soc, London, Engl; IEEE, United Kingdom & Republic of Ireland Section; Inst of Mathematics & Its Applications, Southend-on-Sea, Engl; Inst of Physics, London, Engl; IERE, London, Engl

E.I. Conference No.: 09250

Source: IEE Conference Publication n 262. Publ by IEE, London, Engl p 9-12

Publication Year: 1986

CODEN: IECPB4 ISBN: 0-85296329-7

Language: English

Document Type: PA; (Conference Paper)

Journal Announcement: 8705

Abstract: The operation and application of the transparent-tone-in-band technique have been described with particular reference to the use of feedforward control mechanisms for ensuring coherent band recombination. The merits of a feedforward approach as distinct from the conventional feedback system are fast, accurate recombining of the subbands, no constraint on filtering in the control path, with consequent improved noise rejection properties of the system and the capability of delay matching to achieve an 'effective instantaneous band locking' capability. This latter property reduces or eliminates the need for a **preamble** prior to **data** transmission, particularly when the TTIB technique is also utilized to derive simultaneous modem timing **information** such as carrier, clock and **frame** synchronisation. 5 refs.

Descriptors: *DIGITAL COMMUNICATION SYSTEMS--*Control; RADIO COMMUNICATION

Identifiers: TRANSPARENT TONE-IN BAND; BASEBAND SIGNAL; RUGGED MODULATION ; DPSK; DIGITAL TRANSMISSION; REFERENCE **INSERTION**

Classification Codes:

716 (Radar, Radio & TV Electronic Equipment); 717 (Electro-Optical Communications); 718 (Telephone & Line Communications)

71 (ELECTRONICS & COMMUNICATIONS)

the modals in terms of universal or existensial quantification over contextually-determined sets of possible worlds, epistemically accessible worlds in the case of the epistemics, the command worlds of some authority in the case of the deontics, must and may, normative worlds in the case of should, future worlds in the case of may and will, and worlds compatible with the actual world in the case of can. The epistemic modals are then shown to differ systematically from the non-epistemic modals in syntactic behavior. Epistemic modals cannot appear in sentences with empty VPs or in questions. Within the **framework** of Government and Binding Theory the epistemic modals are shown to be truth-conditional operators which move to COMP at LF to bind propositional variables, thus accounting for the disallowed structures. The semantic effect of this LF position is to weaken or qualify the assertion, resulting in quasi-assertion. Certain adverbs which can take sentential scope are shown to be operators of the same type. Parenthetical expressions have a similar semantic function and similar syntactic position. They contain verbs which are semantically weak (low in affect, **information**, and implication). They are **inserted** in sentence structure but do not select or **embed** complements. (Copies available exclusively from Micrographics Department, Doheny Library, USC, Los Angeles, CA 90089-0182.)

15/5/23 (Item 1 from file: 2)
DIALOG(R) File 2:INSPEC
(c) 2004 Institution of Electrical Engineers. All rts. reserv.

5498019 INSPEC Abstract Number: B9703-6210L-146, C9703-5620L-050

Title: Reservation CDMA for distributed wireless LAN

Author(s): Sung-Won Lee; Dong-Ho Cho

Journal: Journal of KISS(A) (Computer Systems and Theory) vol.23,
no.12 p.1211-24

Publisher: Korea Inf. Sci. Soc,

Publication Date: Dec. 1996 Country of Publication: South Korea

CODEN: CKNOF2 ISSN: 1226-2315

SICI: 1226-2315(199612)23:12L:1211:RCDW;1-W

Material Identity Number: E345-97001

Language: Korean Document Type: Journal Paper (JP)

Treatment: Practical (P)

Abstract: Recent technology innovations have increased the interest of end-user on wireless LAN (Local Area Network). However, conventional access protocols have some problems such as the degradation of channel utilization, necessity of control station and code reuse. Therefore, we propose new multiple access schemes, 'Distributed Reservation CDMA with Priority (DR CDMA P)' and 'Distributed Reservation CDMA without Priority (DR CDMA NP)' that can solve those problems in distributed CDMA wireless LAN environment. Simulation results show reliable performance improvement by new proposed protocol in wireless LAN environment that has large bandwidth and many nodes. This performance improvement is due to the variable length transmission property, minimum guard time and **preamble**, and optimal channel utilization of reservation CDMA. Also, DR CDMA P can transmit **data** effectively when offered load increases over 1 due to the effective control mechanism, although reservation TDMA and DR CDMA NP cannot transmit **data** due to an extreme delay in the heavy load condition. In the view of management, **insertion** of new node and extension problems can be easily solved in proposed reservation CDMA protocols for its variable length property which can **encapsulate** conventional LAN **frame**. Also, new protocol could provide high degree of security readily because of spread spectrum property. Especially, inter-networking with conventional protocol, such as IEEE 8023 Ethernet, is simple without additional overhead for variable length property. (9 Refs)

Subfile: B C

Descriptors: access protocols; code division multiple access; digital simulation; internetworking; time division multiple access; wireless LAN

Identifiers: reservation CDMA; distributed wireless LAN; access protocols ; channel utilization; code reuse; DR CDMA P; DR CDMA NP; simulation results; variable length transmission property; minimum guard time; optimal channel utilization; internetworking; IEEE 8023 Ethernet; variable length property

Class Codes: B6210L (Computer communications); B6150M (Protocols); B6150E (Multiple access communication); C5620L (Local area networks); C5640 (Protocols); C6185 (Simulation techniques)

Copyright 1997, IEE

15/5/24 (Item 2 from file: 2)

DIALOG(R) File 2:INSPEC

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4707219 INSPEC Abstract Number: B9408-1130B-053, C9408-5210B-027

Title: **Structural and behavioral synthesis for testability techniques**

Author(s): Chung-Hsing Chen; Karnik, T.; Saab, D.G.

Author Affiliation: Coordinated Sci. Lab., Illinois Univ., Urbana, IL, USA

Journal: IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems vol.13, no.6 p.777-85

Publication Date: June 1994 Country of Publication: USA

CODEN: ITCSDI ISSN: 0278-0070

U.S. Copyright Clearance Center Code: 0278-0070/94/\$04.00

Language: English Document Type: Journal Paper (JP)

Treatment: Practical (P); Theoretical (T)

Abstract: In this paper, a behavioral synthesis for testability system is presented. In this system, a testability modifier is connected to an existing behavioral level synthesis program, which accepts a circuit's behavioral **description** in C or VHDL as input. The outline of the system is as follows: (1) a testability analyzer is first applied to identify the hard-to-test areas in the circuit from the behavioral **description**; (2) a selection process is then applied to select test points or partial scan flip-flops. Selection is based on behavioral **information** rather than low-level structural **description**. This allows test point **insertion** or partial scan usage on circuits described as an interconnection of high level modules; (3) test **statement insertion** (TSI), an **alternative** to test point **insertion** and partial scan, is used to modify the circuit based on the selected test points. The major advantage of using TSI is a low pin count and test application time as compared to test point **insertion** and partial scan. In addition, TSI can be applied at the early design phase. This approach was implemented in a computer program, and applied to several sample circuits generated by a synthesis tool. The results are also presented. (24 Refs)

Subfile: B C

Descriptors: circuit CAD; design for testability; logic CAD; logic circuits

Identifiers: behavioral synthesis; circuit behavioral **description**; testability analyzer; selection process; partial scan flip-flops; test **statement insertion**; test point **insertion**; computer program; CAD; DFT

Class Codes: B1130B (Computer-aided circuit analysis and design); B1265 (Digital electronics); C5210B (Computer-aided logic design); C7410D (Electronic engineering)

15/5/25 (Item 3 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2004 Institution of Electrical Engineers. All rts. reserv.

04298473 INSPEC Abstract Number: C9301-6110B-066

Title: The rudiments of algorithm refinement

Author(s): Woodcock, J.C.P.

Author Affiliation: Comput. Lab., Oxford Univ., UK

Journal: Computer Journal vol.35, no.5 p.441-50

Publication Date: Oct. 1992 Country of Publication: UK

CODEN: CMPJA6 ISSN: 0010-4620

U.S. Copyright Clearance Center Code: 0010-4620/92/\$5.00+.00

Language: English Document Type: Journal Paper (JP)

Treatment: Practical (P)

Abstract: A **description** is given of the rudiments of algorithm refinement: the business of taking a specification and producing a code that correctly implements it. The author starts with a general discussion of the concepts, and then turns to a particular calculus for algorithm refinement. A definition is arrived at by considering the circumstances under which one program may be substituted for another without a user being able to notice the difference. From this definition, the usual proof rules for refinement are derived: that of weakening the precondition and strengthening the postcondition. The author shows how specifications and programs may be **set** in the same semantic **framework**, so that proof rules may be derived for refinement steps using the various program combinators. However, by writing the specifications in a particular way, the burden of proof may be dramatically reduced. For this purpose, the author arrives at the specification **statement** and also gives the refinement calculus; some basic laws for manipulating specification statements and developing code from them. (18 Refs)

Subfile: C

Descriptors: formal specification; theorem proving

Identifiers: algorithm refinement; calculus; proof rules; precondition; postcondition; specifications; semantic **framework**; refinement steps; program combinators; refinement calculus

Class Codes: C6110B (Software engineering techniques); C4210 (Formal logic); C4240 (Programming and algorithm theory)

15/5/29 (Item 7 from file: 2)

DIALOG(R)File 2:INSPEC

(c) 2004 Institution of Electrical Engineers. All rts. reserv.

00785874 INSPEC Abstract Number: B75025784, C75017271

Title: A pattern-recognition system for monitoring video and audio signals

Author(s): Auerbach, G.

Author Affiliation: Video Image Analysis Corp., New York, NY, USA

Journal: Journal of the Society of Motion Picture and Television Engineers vol.84, no.3 p.162-3

Publication Date: March 1975 Country of Publication: USA

CODEN: JSMTA4 ISSN: 0361-4573

Conference Title: Symposium on Television Broadcast Monitoring

Conference Date: 14 Nov. 1974 Conference Location: Toronto, Ont., Canada

Language: English Document Type: Conference Paper (PA); Journal Paper (JP)

Treatment: General, Review (G)

Abstract: A system has been designed for automatic monitoring of broadcast television commercial materials. It employs the concept of electronic pattern recognition of video and audio signals. No codes need be **inserted** into the program or commercial material. **Instead**, a highly

discrete digital code, or **data** set, is created by processing the commercial's video and audio signals through proprietary hardware. A total of eight **frames** is sampled from the commercial for encoding and storage in a commercial code library. Each television broadcast market has an unmanned VIAC monitor system which looks at all broadcast television material in the market area. As each off-the-air video and audio **frame** is received and processed this 'live' **data** set is compared to the commercial **data** sets in memory for 'goodness of fit'. The output to the digital tape recorder includes commercial identification, channel time, quality **statement** and an unusual-occurrence **statement**, if applicable. (0 Refs)

Subfile: B C

Descriptors: monitoring; pattern recognition; television broadcasting

Identifiers: monitoring video and audio signals; automatic monitoring; broadcast television commercial materials; electronic pattern recognition

Class Codes: B6420 (Radio and television broadcasting); C5530 (Pattern recognition equipment); C7410D (Electronic engineering)

15/5/31 (Item 1 from file: 94)

DIALOG(R)File 94:JICST-EPlus

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03488526 JICST ACCESSION NUMBER: 97A0833386 FILE SEGMENT: JICST-E
Complexity and algorithm of broadcast scheduling problem on radio network.

SOMEYA KATSUHISA (1); FUKURA YOSHIAKI (1); MATSUNO HIROSHI (1)

(1) Yamaguchi Univ., Fac. of Sci.

Joho Shori Gakkai Wakushoppu Ronbunshu, 1997, VOL.97,NO.2, PAGE.203-208,

FIG.11, REF.2

JOURNAL NUMBER: L1697AAO

UNIVERSAL DECIMAL CLASSIFICATION: 621.395.33/.38

LANGUAGE: Japanese COUNTRY OF PUBLICATION: Japan

DOCUMENT TYPE: Conference Proceeding

ARTICLE TYPE: Original paper

MEDIA TYPE: Printed Publication

ABSTRACT: This paper describes a broadcast planning problem in a radio network where the topology varies with the time. Ephremides and Truong formulated the problem on the relationship between topology variation and the number of the broadcast station, and proved this formulation to be NP perfect. This paper points out an error in this proof. This paper presents a refuting example against the **statement** in the proof in their paper that the maximum independent **set** in graph G is the maximum independent set also in expanded graph Ga, and presents another simpler proof. In addition, this paper improves the dispersive algorithm in their paper so as to obtain the same solution in shorter time.

DESCRIPTORS: mobile communication; **packet** switching; computer network; simultaneous transmission; scheduling; NP complete problem; proof(evidence); topology; priority ranking; communication design

BROADER DESCRIPTORS: telecommunication; store-and-forward switching; communication exchanging; exchange; switching; communication network; **information** network; network; communication system; method; problem; mathematics; order(sequence); mathematical relation; design

CLASSIFICATION CODE(S): ND11020E

Set	Items	Description
S1	7510524	MODIF? OR EDIT? OR REVIS? OR REVAMP? OR REWORK? OR ALTER? - OR UP() (DATING OR DATE? ?) OR UPDAT? OR CHANGE?
S2	905506	PACKET? OR FRAME? OR DATAGRAM? OR BLOCK() DATA
S3	1415850	INSERT? OR (PUT OR SET) () (INTO OR "IN") OR INJECT? OR INTE- RJECT? OR STRIP OR REPLACE OR EMBED OR ENCAPSULATE
S4	11408329	HEADER OR DATA OR FILE OR DESCRIPTION? OR INFORMATION
S5	1959022	IN() PLACE() OF OR INSTEAD OR SUBSTITUTE OR ALTERNATIVE?
S6	1149361	PREAMBLE OR STATEMENT
S7	54	S1 (S) S2 (S) S3 (S) S4 (S) S5 (S) S6
S8	38	S7 NOT PY>2000
S9	38	S8 NOT PY>20000921
S10	34	RD (unique items)
S11	231	S3 (5N) S4 (5N) S6
S12	3	S11 (5N) S5
S13	244795	ETHERNET OR FDDI
S14	0	S13 (S) S11
S15	20	S13 (S) S3 (S) S4 (S) S6
S16	15	S15 NOT PY>2000
S17	13	S16 NOT PD>20000921

? show files

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(c) 2004 The HW Wilson Co

17/5,K/3 (Item 2 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01456795 SUPPLIER NUMBER: 11441287 (USE FORMAT 7 OR 9 FOR FULL TEXT)
In the Ethernet frame. (the physical level) (part one of three
articles) (Connections)

Chadwick, Vince
DEC User, p51(1)
Sept, 1991

ISSN: 0263-6530 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 815 LINE COUNT: 00061

ABSTRACT: Multiple access and collision detect principles developed for the Aloha network at the University of Hawaii developed into CSMA\CD (Carrier Sense, Multiple Access with Collision Detection), which was incorporated into the Ethernet LAN being developed by Xerox, DEC and Intel. CSMA\CD describes how a node works in an Ethernet LAN. All nodes have equal status and can transmit at any time. Nodes listen to the line continuously. They defer their own transmission if they detect activity, and then the transmission of a packet of data begins. The node compares what it is sending with what it hears. Transmission of the entire frame takes place if the two are the same. If there is a difference the node assumes there has been a collision with a transmission from another node. Transmission stops, and a 32-bit jam signal is installed to ensure all the other nodes know of the collision. The frame is retransmitted after a specified period of time, determined by its backoff algorithm. Manchester encoding and the format of an Ethernet frame are also discussed.

CAPTIONS: Frame format. (chart); Manchester encoding. (chart)

SPECIAL FEATURES: illustration; chart
DESCRIPTORS: Ethernet; LAN; Network Architecture; System Design; Nodes;
Collision Detection; Access Controls
FILE SEGMENT: CD File 275

... and padding fields is a 4-byte checksum for the entire frame.

It should be noted that **Ethernet** is a 'connectionless' service. It operates at the physical and **data** link layers and there is no handshaking to acknowledge receipt of frames, or any error correction. On receipt of a frame, nodes **strip** off the **preamble**, check for validity of format, reject it if not addressed to that node, use the checksum to detect errors, remove any **data** padding and finally pass the frame up to the higher layers where the network protocols ensure **data** communication integrity.

SYNCHRONISE CLOCKS

Baseband Ethernet nodes put their signal onto the cable by raising and lowering...

17/5,K/5 (Item 4 from file: 275)
DIALOG(R)File 275:Gale Group Computer DB(TM)
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01318258 SUPPLIER NUMBER: 07722552 (USE FORMAT 7 OR 9 FOR FULL TEXT)
FDDI standard fosters improved interoperability. (Fiber Distributed Data Interface)

Milligan, Gene E.
Networking Management, v7, n9, p66(4)
Sept, 1989

ISSN: 1052-049X
WORD COUNT: 2286

LANGUAGE: ENGLISH
LINE COUNT: 00187

RECORD TYPE: FULLTEXT; ABSTRACT

ABSTRACT: The Fiber Distributed Data Interface (FDDI) standard provides both an internationally accepted basis for optical fiber communications interoperability and a layered structure for value-adding variations optimized to specific applications. Several examples are provided. FDDI is optimized for large packet data transmission, but a superset, FDDI-II, is designed for high-performance, real-time applications. The Physical Layer Medium Dependent Protocol (PMD) defines physical interoperability, but a single-mode (SMF) version facilitates connecting FDDI nodes farther apart (up to 60 kilometers). Other FDDI standards with alternatives that are described include: the Physical Layer Protocol, Media Access Control, Station Management and Hybrid Ring Control. Trends in organization support of FDDI are noted.

CAPTIONS: FDDI transmission formats. (chart); FDDI standard documents. (table); FDDI-II channel allocation. (chart)

SPECIAL FEATURES: illustration; chart; table

DESCRIPTORS: FDDI Standard; Compatibility; Implementation; Connectivity; Fiber Optics; Communications Technology; Communications Equipment

FILE SEGMENT: CD File 275

... latency adjustment function, which is key to reliable ring operation.

MAC (Media Access Control) provides for the FDDI transmission protocol data units, media access, address insertion and detection, operational timing, and error detection. Protocol data units comprise tokens and frames. An FDDI frame (Figure 1B) consists of a preamble, starting delimiter, frame control, destination address, source address, information field, error check, and end-of-frame delimiter. Figure 1 provides further information on both the FDDI token and frame formats.

FDDI addresses are intended to be 48-bit mandatory and 16-bit optional...

17/5,K/6 (Item 1 from file: 674)
DIALOG(R)File 674:Computer News Fulltext
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085637

Peeping tools

Nine tools that can snoop on your employees.

Byline: TRAVIS BERKLEY

Journal: Network World Page Number: 55

Publication Date: July 10, 2000

Word Count: 5117 Line Count: 454

Text:

... works with Microsoft Windows NT and Windows 2000. It also uses the Microsoft Management Console and Microsoft Data Access. Not only can it search the drives and shares across your domains, but it also aims...

... uses the same set of policies and filters. It works in two ways: Each client agent monitors file activity in real time as items are saved, moved or renamed. The central management console also lets...

...states that the overhead "is so small that it is not measurable." That's a pretty bold statement, but rest assured that disk throughput didn't

suffer once FileScreen 2000 was installed and running.Out...

... screening groups are referenced by policies that determine what action to take when it finds a "bad" file . Policies can be configured individually or by workgroup. Additionally, filters can be employed within the policy to...

... can find ways around the restrictions. The sole criterion FileScreen 2000 uses is the name of the file , including the extension. A sneaky user could store all of their .jpg files as .jp...

... not a drawback, these functions could be a nice enhancement in future revisions. Looking for QuakersOur next file seeker is AntiGame Plus by DVD Software. AntiGame Plus was initially designed to find games that might ...

... box, AntiGame Plus Version 5.0 can detect 10,850 games. The program doesn't rely on file names as that would be an easy way to defeat detection. Instead, it looks for matches in file size and a signature of the file , which works like a checksum. If the file size and signature match AntiGame's database, the program declares a detection. This scheme isn't foolproof... associate other files to delete.By default, AntiGame scans only executable files (those with .exe or .com file extensions). You can also scan all files to catch Dynamic Link Libraries or other file types. In addition, AntiGame can scan archives, such as .zip files, which could catch a Napster installation...

... on each machine that you want to track. The client then communicates with a server to report information and check the gameplay policies.Loading the client can be done through any logon script or similar ... infractions can be accomplished using Simple Mail Transfer Protocol mail. There are seven variables that can be inserted into the message body to give the administrator a quick idea of what the problem is. For...

... a large number of predefined reports and graphs. Some are detail-oriented, while others summarize events. If information about a particular user's browsing habits is needed, it's easy to specify the user and... on-screen notifications by having the activity highlighted in a particular color and possibly playing a .wav file to go with it. This makes it very easy to see from across the room when a...

... E*trade fixed the problem. But this shows that you have to be careful about what you put into your dictionaries. Of course, if your climate is more temperate, Internet Manager could have been configured to...

... categories is "confidential." This category can be used to hold project code words, trademark names or other information . Message Inspector can then be set to watch for these words and phrases to make sure no one is leaking information . Of course, Message Inspector can watch for the standard fare of sexually explicit words, sports, gambling or...

... sent to an administrator for approval, then delivered as normal later. Message Inspector can also block certain file types. If you have no use for .jpg or .gif files at your company, it's easy quickly, but if there's one thing administrators like, it's up-to-date information . Checking the wireThe last category contains products that dig a little deeper. After using them for a...

... Windows platform, either as a single stand-alone installation, or in a client/server setup where the data is collected and stored on one machine and management and reporting takes place on another. The single...

...it must be installed at the appropriate place on your network to see and capture the relevant **data** - presumably as close to your Internet connection as possible. In addition to TCP/IP, LittleBrother Pro can...

...in real time your "top talker" - the user and workstation generating the most traffic. In addition, that **information** can be broken down into which sites he or she is trying to visit, and what services...

... a "top sites" report that shows the company's favorite hangout and who is frequenting it. This **information** can be detailed according to time connected or **data** transferred. LittleBrother Pro also rates the sites and services into four basic groups: neutral, productive, unproductive and...

... agents, as opposed to a complete and separate install at various spots. Each agent collects the same **information** and enforces the same policies. But the agents can all be controlled and managed from a central administration console, which by default is the first installed machine. If you like to have as much **information** as you can squeeze onto a screen, TrafficMax will be your best friend. There are a plethora...

... available, each updated in real time. Various graphs target specific layers, such as packet details and types, **Ethernet** details, TCP/User **Data** Protocol (UDP) statistics, and so forth. Charts are also available detailing specific values. Each can be generated... daily, weekly or customized intervals. The results can be stored or sent out via e-mail. The **file** formats include HTML, comma-separated value or .bmp and .jpg. TrafficMax can also be configured to watch...

... create a policy that will follow a user from workstation to workstation. TrafficMax puts a lot of **information** at your fingertips. In fact, if you open up all the windows that are available, you could easily suffer from **information** overload. Luckily, the screens are very configurable. Since TrafficMax goes to the trouble of creating HTML files ...

17/5,K/7 (Item 2 from file: 674)
DIALOG(R)File 674:Computer News Fulltext
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070254

DSL: Performance under pressure

Paradyne's MVL modem installs easily and performs well.

Byline: John Bass, Network World Test Alliance

Journal: Network World Page Number: 60

Publication Date: November 16, 1998

Word Count: 1364 Line Count: 122

Text:

... remote PCs and a DSL Access Multiplexer (DSLAM) based on a telco's pre-mises. MVL allows **data** and voice transmissions simultaneously over the same twisted-pair wiring. The components negotiate **data** rates depending on the condition of the DSL loop. The negotiated rate is called the training...

... link. In each of our loop simulations, we noted worst-case training rates, which occurred when we **injected** noise at the receiving end of a traffic stream. As expected, we achieved the highest training rate while the phone was on hook because all the bandwidth was available for the **data**

channels. On our good link, this scenario resulted in an upstream and downstream rate of 768K bit...

... of 512K bit/sec upstream and 640K bit/sec downstream because the voice channel slightly overlaps the **data** channel and takes over when activated. Transmission rates on the **data** channel are reduced even when no one is speaking. However, user response time is still equivalent...

... see Figure 1). In our throughput tests, we found a deficit of roughly 5% to 10% in **Ethernet** throughput compared with the DSL training rate. The shortfall is due to the inherent inefficiencies of converting **Ethernet** packets to run over the DSL link. We found cases in which **Ethernet** throughput exceeded the training rate, but that was simply due to buffering. On bidirectional tests we...

...while the devices negotiated. It took approximately 10 to 12 seconds for the system to stabilize the **data** channel. This seems a little long, and it would be unacceptable if a phone were picked up...between themselves. We found that total bandwidth was less than the training rate because of interpacket gaps, **Ethernet** preamble bits and collisions. SetupWhile latency was sometimes a problem, Paradyne's easy installation claims held true. The...

... lets you connect it to a device that supports the 802.3Q standard for virtual LANs over **Ethernet**. This feature allows the DSLAM to tag the **Ethernet** frames for the DSL link the packets are coming from or destined for. Users can choose their...

... that can handle multiple 802.3Q streams per port. Users manage the MVL system through serial and **Ethernet** interfaces; Paradyne doesn't provide a Web interface for management. You can monitor the training rates, **data** rates, packet rates and other operational parameters of the modem and the DSLAM. Paradyne has published all...

... on the World Wide Web, which makes access easy. However, all the manuals are posted in **file** form. We'd like to see the documentation also available in HTML to eliminate the need to...

... poor-quality loops. The ability to service multiple modems on each DSL link allows subscribers to forgo **Ethernet** connections in a small office by using MVL over existing phone cabling. With those benefits, we give...

...network industry, each bringing to bear years of practical experience on every review. For more Test Alliance **information**, including what it takes to become a member, go to www.nwfusion.com/alliance.